

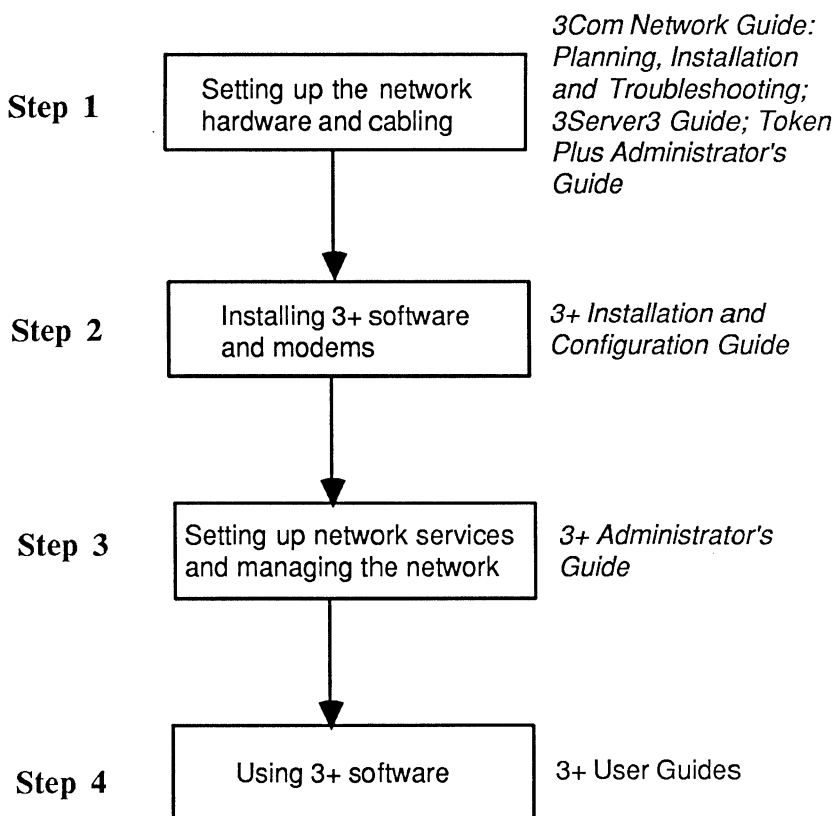


Administrator's Guide

3PlusTM

3Com[®]

Where to find information



3+ Administrator's Guide

**A member of the 3+ family of products.
For use with DOS 3.1 or DOS 3.2**

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Table of Contents

Chapter 1: Quick Start

1-2	Using 3+Menus to Set Up Services
1-3	Name Service Setup
1-5	File Service Setup
1-6	Print Service Setup
1-6	3+Mail Service Setup
1-7	3+Start Service Setup
1-10	3+Remote Service Setup
1-11	3+Route Service Setup
1-11	3+Backup Service Setup

Chapter 2: The 3+ Network Services

2-2 3+ Network Users

2-5 3+ Network Services

2-5	3+Menus Service
2-5	3+ Name Service
2-11	The 3+Share File Service
2-20	The 3+Share Print Service
2-23	The 3+Mail Service
2-25	The 3+Start Service
2-25	The 3+Remote Service
2-26	The 3+Route Service
2-27	The 3+NetConnect Service
2-28	The 3+3270 Service

Chapter 3: Learning About 3+ Commands

3-2 Conventions Used in this Guide

3-2	Key Spellings
3-2	Key Combinations
3-2	Drive Identifier Conventions
3-3	Examples
3-3	Command Syntax Notation

3-4 Command Parameters

3-5	File and Print Service Parameters
3-6	Name Service Parameters
3-7	Default Values and Parameters

3-8	Command Usage
3-8	Multiple Commands
3-8	Wildcard Characters
3-10	The /NP Parameter
3-10	Correcting Errors
3-10	Canceling Commands
3-10	Entering Commands from DOS
3-11	Entering a Service
3-11	Returning to DOS
3-12	Getting Help

Chapter 4 - Setting Up Network Services

4-2	Using 3+Menus to Set Up Services
4-6	Drive Identifier Conventions
4-7	Name Service Setup
4-7	Naming Conventions
4-10	Log in First Time
4-11	Assign a Password
4-11	Assign a Home Directory
4-13	Add Organizations and Domains
4-15	Add Users
4-19	Add Aliases
4-20	File Service Setup
4-23	Log in as Server-User
4-23	Create the APPS Directory
4-26	Copy DOS to APPS
4-27	Copy Applications to APPS
4-34	Share the Configuration Directory
4-35	Print Service Setup

4-38	3+Mail Service Setup
	4-39 Adding Groups
	4-39 Adding Members to Groups
4-40	3+Start Service Setup
	4-42 Share the Directory
	4-43 Create a Public 3+Start Volume
	4-46 Create Private 3+Start Volumes
	4-49 Changing 3+Start Defaults
	4-51 Changing Information in 3+Start Volumes
4-53	3+Remote Service Setup
4-55	3+Route Service Setup
	4-56 For Servers on Other Networks
	4-56 For Users on Other Networks
4-59	3+Backup Service Setup
4-60	Name Service Entries Listing
4-61	Network Services Testing
4-64	Problem Solving

Chapter 5: Managing the Network

- 5-2 Organizing Network Administration**
 - 5-2 No Formal Management
 - 5-2 Centralized Network Management
 - 5-3 Distributed Network Management

- 5-3 Managing Storage Space**
 - 5-4 Checking Disk Space
 - 5-4 Creating Disk Space

- 5-5 Moving Users**

- 5-11 Backing Up and Restoring Files**
 - 5-12 Guidelines for Backup
 - 5-16 Using DOS Backup
 - 5-19 Using DOS Restore
 - 5-23 Backing up the 3+Name Service

- 5-23 Managing Printers**
 - 5-24 Changing a Printer Sharename
 - 5-26 Changing a Printer's Configuration
 - 5-27 Adding a Printer
 - 5-29 Deleting a Printer
 - 5-32 Reordering a Print Queue

- 5-35 Managing the 3+Remote Service**

- 5-36 Managing the 3+Route Service**
 - 5-36 Updating 3+Route
 - 5-37 Monitoring Use and Isolating Problems

5-40	Deinstalling and Moving Services
5-41	The 3+Share File and Print Service
5-42	The 3+Name Service
5-42	The 3+Mail Service
5-43	The 3+Remote or 3+Route Service
5-44	The 3+Start Service
5-45	Shutting Down Network Services
5-46	3+Mail Service Shutdown
5-47	3+File and 3+Print Service Shutdown
5-50	Name Service Shutdown

Chapter 6: Command Reference

6-2	Command Overview
6-11	File Service Commands
6-11	3F MOD
6-15	3F SHARE
6-21	3F SHUTDOWN
6-25	3F UNLINK
6-27	3F UNSHARE
6-29	3+Mail Service Commands
6-29	3M DELM
6-31	3M DEL1M
6-33	3M DELO
6-37	3MDEL1O
6-41	3M DIRM
6-43	3M DIRO
6-45	3M HELP
6-47	3M SERVER=
6-49	3M SHUTDOWN
6-51	3M STATUS

6-53**Name Service Commands**

6-53	3N ADD ALIAS
6-55	3N ADD DOMAIN
6-59	3N ADD GROUP
6-61	3N ADD MEMBER
6-63	3N ADD PROP
6-67	3N ADD SERVER
6-71	3N ADD USER
6-77	3N DEL
6-81	3N DEL ALIAS
6-83	3N DEL DOMAIN
6-85	3N DEL MEMBER
6-87	3N DEL PROP
6-89	3N DIR PROP
6-91	3N MOD
6-101	3N MOD DOMAIN
6-103	3N MOD PROP
6-105	3N SET
6-107	3N SHUTDOWN

6-109**Print Service Commands**

6-109	3P DEL
6-113	3P MOD
6-115	3P MOVQ
6-117	3P RESUME
6-125	3P SET
6-129	3P SHARE
6-133	3P SHUTDOWN
6-135	3P STOP
6-139	3P UNLINK
6-141	3P UNSHARE

6-143	Start Service Commands
6-143	3S CREATE
6-147	3S DEL
6-149	3S DIR
6-153	3S LINK
6-155	3S MODIFY
6-158	3S UNLINK

Chapter 7: Glossary

Appendix A: Error Messages

Appendix B: Diskette File Listings

Appendix C: Server Directory Contents

Appendix D: ASCII Character Set

Appendix E: Copying Files Using 3COPY

Appendix F: Technical Support

List of Figures

Page	Figure
2-6	2-1. Objects Named in the Name Service
2-10	2-2. Location of the Network Number
2-12	2-3. Hierarchical Structure of Directories
2-13	2-4. 3+Share User Directory Structure
2-15	2-5. 3+Share Server Directory Structure
2-24	2-6. 3+Mail Functions
4-3	4-1. 3+Menus Administrator Menu Example
4-22	4-2. File Service Directory Structure
4-33	4-3. Accessing Data Files
4-55	4-4. Template to Assist Remote Users
5-15	5-1. Backup Retention Organization

List of Tables

Page	Table
2-4	2-1. Types of Users
2-18	2-2. Sharename Access Rights
4-4	4-1. 3+Menus Administrator Functions
4-36	4-2. Available Printer Ports
B-2	B-1. Diskette No.1
B-3	B-2. Diskette No. 2a
B-3	B-3. Diskette No. 2b
B-4	B-4. Diskette No. 3

Page**Table**

B-5	B-5.	Diskette No. 4
B-6	B-6.	Diskette No. 5
B-6	B-7.	Diskette No. 6
B-7	B-8.	Diskette No. 7
B-7	B-9.	Diskette No. 8
B-8	B-10.	Diskette No. 9
B-9	B-11.	Diskette No. 10
B-10	B-12.	Diskette No. 11
B-11	B-13.	Diskette No. 12
B-12	B-14.	Diskette No. 13
B-12	B-15.	Diskette No. 14
B-13	B-16.	Diskette No. 15
B-13	B-17.	Diskette No. 16
B-14	B-18.	Diskette No. 17
B-15	B-19.	Diskette No. 18
C-4	C-1.	PC Server Running CIO SYS
C-5	C-2.	Local Workstation Startup
C-6	C-3.	3+Remote Workstation Startup
C-6	C-4.	3+Share User
C-7	C-5.	3+Start Master
C-8	C-6.	3+Local Workstation Startup
C-9	C-7.	3Server
C-11	C-8.	3+Share Service
C-11	C-9.	3+Name Service
C-11	C-10.	3+Mail Service
C-12	C-11.	3+Route Service
C-12	C-12.	3+Remote Service
C-12	C-13.	3+Start Service
C-13	C-14.	3+Backup Service
C-13	C-15.	3+TurboShare Service

Chapter 1: Quick Start

This chapter presents a quick overview of the steps required to set up the 3+ services on your network. This chapter is intended for the network administrator who already has experience setting up services and needs **minimal** instruction.

First-time users may want to begin with Chapter 2 which gives background information. We then recommend reading Chapter 4, which explains in greater detail how to set up services.

Before you set up any services, you must have already installed the server software. For installation instructions refer to the *3+ Installation and Configuration Guide*.

The following pages describe setting up all 3+ services in the order we recommend that you use them. If you did not purchase or do not want to set up a particular service, just go on to the next service.

The following service setup procedures are described:

- ▶ Name service
- ▶ Print service
- ▶ 3+Mail service
- ▶ File service
- ▶ 3+Start service
- ▶ 3+Remote service
- ▶ 3+Route service
- ▶ 3+Backup service

Using 3+Menus to Set Up Services

The 3+Menus service provides preconfigured network administration sub-menus to help you administer the network. 3Com recommends that both administrators and end-users use 3+Menus as the primary user interface to the network.

For a detailed list of the 3+ functions these administrative menus supply, see Chapter 4. The *3+Menus Reference Guide* contains detailed information on setting up and customizing 3+Menus.

Name Service Setup



NOTE: If you have difficulties understanding any of the steps in this chapter, please turn to Chapter 4: Setting Up Network Services. Chapter 4 contains detailed explanations and examples for each step.

1. Insert the *3+Share User #2* diskette in drive A: and use the LOGIN program to log in to the network as Admin.
 2. Use the 3N MODIFY command to assign a password to Admin. Write down the Admin password and store it in a safe place for future reference.
-



NOTE: If you have installed the five-user version of 3+Share, proceed to Step 4.

3. Use the 3N MODIFY command to assign Admin a home directory.
-



NOTE: The server you specify at the 3Share Server prompt must have 3+Share software installed and be operational. If you assign the Admin user a 3+Mail server, that server must also have 3+Mail installed and be operational.

4. Use the 3N ADD DOMAIN command to add domains and organizations as needed for your network.



NOTE: If you supply only one name in response to the Domain Name prompt, a domain is added to the current organization. When you add an organization, you must also add a domain; you cannot have an organization that has no domain.

5. Use the 3N ADD USER command to create another user with administrative capabilities. If the user named Admin should accidentally be deleted or a password forgotten, you can log in as this user to perform administrative functions.
 6. Use the 3N ADD USER command to add users to the network, assigning user capability, a server, and a home directory location to each. A three-part name consists of Name:Domain:Organization.
-



NOTE: When adding users, follow the conventions discussed in the "Name Service Setup" section of Chapter 4.

7. Use the 3N ADD ALIAS command to add aliases to the Name service.

File Service Setup

1. Log in as the server-user and use the 3F SHARE command to create and share a directory called APPS with read-only (public) access rights.
2. Use the 3F SHARE command again to assign a second sharename (for example, APPSADMN) to the APPS directory with Read-Write-Create access rights and a password.
3. Create subdirectories under the APPS directory. All DOS files go in the DOS subdirectory. Public menus and the menu programs go in the MENUS subdirectory. Each application goes in its own directory. For a diagram of this directory structure, see Figure 4-2 in Chapter 4.

The APPS root directory should contain the following files:

3N.EXE (3+Name service command program)
3F.EXE (3+File service command program)
3P.EXE (3+Print service command program)
3M.EXE (3+Mail service command program)
LOGIN.EXE (3+ LOGIN command program)
LOGOUT.EXE (3+ LOGOUT command program)
MAIL.EXE (3+Mail user program)
A batch file to start each resident application (optional)

4. Use the 3FSHARE command to share the \3PLUS\3CONFIG directory, assign the sharename /CONFIG, private access rights, and a password.

Print Service Setup

1. Log in as the server-user for the server whose printers you want to share.
2. Link the APPS directory to D: or insert the *3+Share User #2* diskette in drive A:. Whichever you choose, make it the default drive.
3. Use the 3P SHARE command to share the printer. Repeat for each printer attached to the server. If other servers have printers attached, you must repeat these first three steps for each server and printer.
4. Make sure each printer is turned on and ready for use.

3+Mail Service Setup

1. Log in as Admin and use the 3N ADD GROUP command to add groups. The groups are used as distribution lists so that users can send a message to many people by specifying the group rather than entering individual user names.
2. Use the 3N ADD MEMBER command to add members to the group or groups you created in step 1. Members can be individuals or other groups.

Any members you add must already be registered in the Name service; that is, you must have added them to the Name service with the 3N ADD USER or 3N ADD GROUP command.

3+Start Service Setup

Before the 3+Start service can be used, you must create one or more 3+Start volumes and must have created the 3+Start Master diskette via the Installation and Configuration program. These volumes are files in the directory \3PLUS\3START\STARTVOL that contain the same type of information as a 3+ Workstation Startup diskette and can be created only by the Admin user or a user with administrator capability.

1. Log in as the server-user and use the 3F SHARE command to assign the sharename STARTDIR to the directory \3PLUS\3START\STARTVOL.
2. Log in as Admin and use the 3F LINK command to link the 3+Start directory STARTDIR to D:. Make D: the default drive.
3. Place the 3+Start Master diskette in drive A:. (This is the diskette you created during the installation process.)



CAUTION: Only the 3+Start Master diskette can be used to create a 3+Start volume.

4. If you want to customize, add, or delete files in the 3+Start volume, make the changes to the 3+Start Master diskette. All files on this diskette will be copied to the public 3+Start volume created in the following step.

 **NOTE:** If you plan to continue to use EtherSeries servers on the network, workstations using 3+Start can access them and use applications through the driver EPATH. To use this driver, copy the file \3DRIVERS\EPATH.SYS from the *Installation #1 (Drivers)* diskette to the 3+Start Master diskette. Then edit the CONFIG.SYS file, replacing the line `DEVICE = STRDRV.SYS` with `DEVICE = EPATH.SYS`.

 **NOTE:** To change anything in the 3+Start volume after it is created, see the section "Changing Information in a 3+Start Volume" in Chapter 4.

5. Use the 3S CREATE command to create a public 3+Start volume called START. This will be the default 3+Start volume.
-

 **NOTE:** Once a *public* 3+Start volume has been created, security reasons preclude adding to, changing, or deleting the contents of the volume. As Admin, however, you can change the volume's status from public to private using the 3S MOD command (see Chapter 6). Make additions, changes, and deletions to the volume and return its status to public.

6. Use the 3S CREATE command to create private 3+Start volumes as needed. Each private 3+Start volume must have a password.



NOTE: If you copy licensed software to a 3+Start volume, make sure each user accessing the volume has a licensed copy of the software in compliance with copyright laws.

7. Use a text editor to modify the 3+Start banner page and initial prompt as desired. The banner page is contained in the ASCII file \3PLUS\3START\BANNER.ASC and can be modified to display any message you want. The initial prompt is in the ASCII file \3PLUS\3START\PRMPT.ASC and can be changed to control the following prompts:

ques1=on	Enables the prompt Use 2.4 EtherStart? (Y/N)
ques2=on	Enables the prompt 3+Start Volume Name?



NOTE: To delete the banner page entirely, either delete or rename the \3PLUS\3START\BANNER.ASC file. You can disable one or both initial prompts by changing the value of **ques1/ques2** to **OFF**.

3+Remote Service Setup

1. Use the 3N ADD USER command to add an entry in the Name service for each remote user.
-



NOTE: An individual user needs only one entry in the Name service to use the network both locally and remotely.

2. Assign a unique network number to each remote user. This allows the network services to maintain a single, logical connection with the remote user, even if several telephone calls are required between the user logging in and logging out. The network number can range from 0004F000 to 0004FFFF. Each remote user must have a unique network number and must enter it in the PROFILE.SYS file on the 3+Remote Workstation Startup diskette. Refer to Figure 4-4 for a template that will assist remote users.
-



NOTE: This remote user network number has no relation to the network number you assigned to the Name service.



CAUTION: Make sure that each remote user is assigned a unique network number. Otherwise, if two remote users access the network using the same network number, the results are unpredictable.

3+Route Service Setup

1. Follow the steps for 3+Remote service setup described earlier in this chapter.
2. If you want to use File and Print service commands to access files and printers on a server from another network, use the 3N ADD SERVER command to add the server to your network's Name service.
3. If you want to communicate with users on another network using 3+Mail, use the 3N ADD DOMAIN command to add the other network's domain and organization to your network's Name service, and your network's domain and organization to the other network's Name service.
4. If you want to use File service commands to access a user's files on another network, use the 3N ADD USER command to add the user to your network's Name service.

3+Backup Service Setup

The 3+Backup service allows you to use a 3Server to back up all other 3+ servers on the network that have 3+ File and Print services installed. For detailed instructions on installing the tape backup unit and using the 3+Backup (3B) commands, see the *3Server Tape Backup Guide*.

- Log in as the server-user and use the 3F SHARE command to assign a sharename to the \3PLUS\3BACKUP directory. To perform a backup operation, link to this directory and issue the appropriate 3B commands.

Chapter 2: The 3+ Network Services

This chapter gives you basic information about the 3+ network. You need to understand this information before you begin using 3+ software and before you read the rest of the chapters in this guide.

You will find information in this chapter about:

- ▶ 3+ network users
- ▶ 3+ network services

3+ Network Users

You communicate with 3+Share using commands or menus. There are three types of 3+Share commands corresponding to the three types of users on the 3+ network:

- ▶ Network users
- ▶ Administrators
- ▶ Server-users

A **network user** can use only user commands. An administrator can use both administrator and user commands. Anyone logged in as a server-user can use both server-user and user commands.

A network user is assigned the capability class U (for User) by the network administrator. A user runs application programs and uses DOS commands. As members of the network, users also share disk files, printers, and applications on the network. Users interact with the network and share its resources by using 3+Share user commands.

An IBM PC-compatible server that has both 3+Share server software and 3+Share user software installed can be used as a server and a workstation at the same time. Such a server is known as a **concurrent server**, and any user who is working at a concurrent server is a **concurrent user**. Refer to the 3+ *Installation and Configuration Guide* for setting up concurrent servers and for concurrent server use.

A **network administrator** is a user with administrator capability (A). Administrator capability lets you manage the 3+Share server software and the devices on the network using both 3+Share user and administrator commands. Only users with administrator capability can use administrator commands.

An **initial user** or **Admin** (with administrator capability) is created when the 3+Share Name service software is installed.

The network administrator first logs into the network as this initial user to set up the 3+ services. Once logged in as the initial user, the administrator can add his own name and password to the 3+Name service, assigning himself administrator capabilities; he can then continue setting up services.

He can also add a password to the Admin entry (in the 3+Name service) to prevent its unauthorized use.

A **server-user** is any user who logs in to the network using the name of a server as his user name; he must also supply the correct password for that server. A server-user performs special administrator functions such as naming and sharing printers so that the network can then use the printers. Each time a server-user function is needed, you log in with a server name and become the server-user to perform that particular function.

A server-user does not have a user entry in the Name service and therefore is not assigned a capability class as are general users and administrators.

Table 2-1. Types of Users

Class	Designation	Capabilities
General user	U	Run applications programs Use DOS commands Use network resources
Network administrator	A	User capabilities, plus: Manage 3+ Server software Manage network devices
Initial user/ Admin	A	User capabilities, plus: All network administrator functions First user on the network (created during 3+Share installation)
Server-user	Does not apply	Special administrator functions for installing and sharing services and peripherals on a server

3+ Network Services

The 3+ network software services that make sharing resources on the network possible are:

- ▶ 3+ service
- ▶ 3+Name service
- ▶ 3+Share File service
- ▶ 3+Share Print service
- ▶ 3+Mail service (optional)
- ▶ 3+Start service (optional)
- ▶ 3+Remote service (optional)
- ▶ 3+Route service (optional)
- ▶ 3+NetConnect service (optional)
- ▶ 3+3270 service (optional)

3+Menus Service

The 3+Menus service works with 3+Share software to provide a straightforward, visual interface to the 3+ network. Instead of typing commands, you select items from the menus and from lists to access network resources and run application programs. The 3+Menus service also provides commands for file management operations such as copying, moving, renaming, and deleting.

3+Menus can be customized to meet the needs of network users. Menu items can be added to perform network operations and to run application programs and batch files.

Complete information on how to install and use 3+Menus can be found in the *3+Menus Reference Guide* included in your 3+Share package.

3+Name Service

The 3+Name service is a data base that stores the names of and information about parts of the network. Figure 2-1 shows the parts of the network that are named. For complete information on 3+Name commands, refer to Chapter 6.

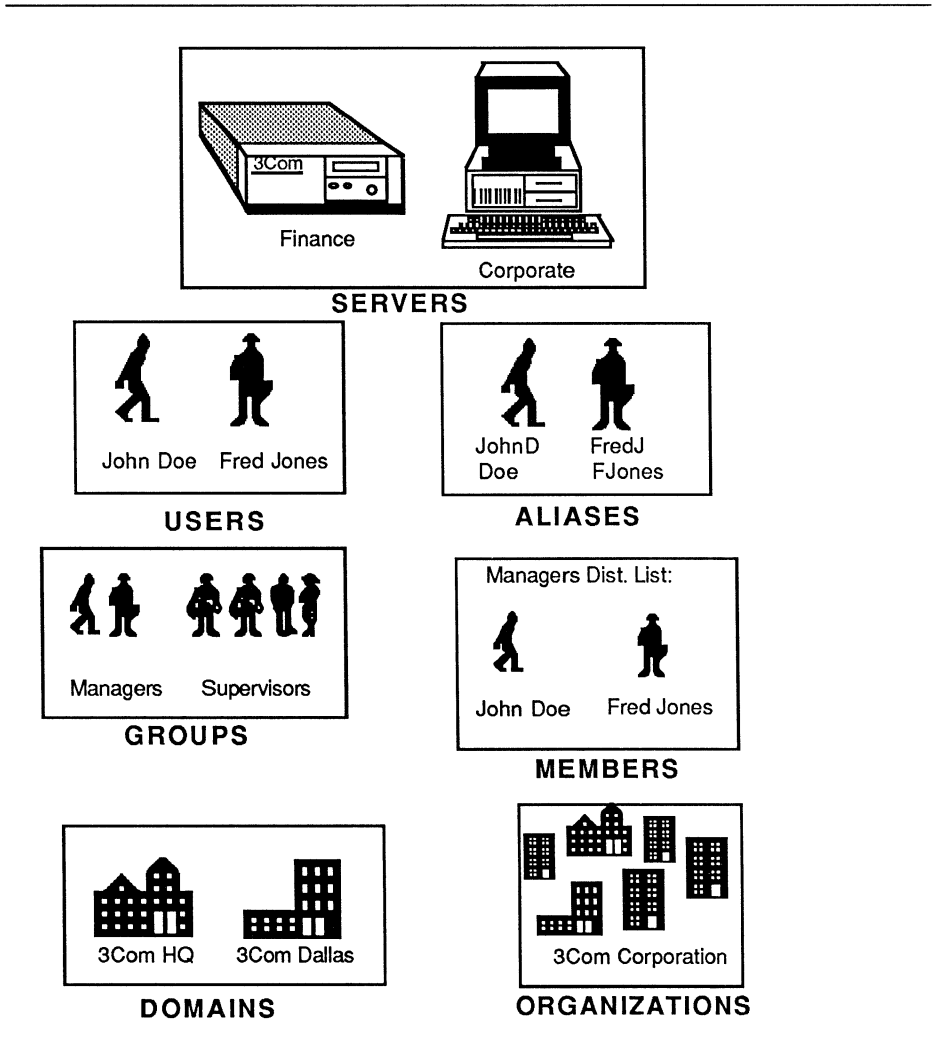


Figure 2-1. Objects Named in the Name Service

Each named part of the network has an entry in the Name service. Network administrators manage the Name service by adding, deleting, and modifying these entries. Users use the Name service to get information about entries, such as a list of users or groups.

Specifying Three-part Names

Each entry in the Name service has a three-part name that is specified as:

Name:Domain:Organization

This three-part name structure uniquely identifies items on different networks to allow easy communication between 3+ networks.

The **name** you give a user, group, alias, or server is the name by which you want it known. For example, a user name might be "John Doe", or a server, "Marketing", as shown in Figure 2-1.

A **domain** is a category within the organization. It is generally the geographical location of part of the company. Using the example in Figure 2-1, John Doe could be assigned the domain HQ (Headquarters) because he works at the headquarters of 3Com. His name, then, would be specified as John Doe:HQ:3Com. Domains have entries in the Name service as do organizations. Domains **cannot** span multiple networks.

An **organization** is the top level category to which items on the network belong. In most cases, an organization is the name of a company. Usually there is one organization per network, but you can have more than one, and an organization can span more than one network. An organization has an entry in the Name service. For example, in Figure 2-1, "3Com" is an organization.



NOTE: The examples in this guide show just the name part of the three-part name except in those cases that require a full three-part name.

Aliases

Aliases are synonyms for entries in the Name service. For example, in Figure 2-1, John Doe may want to call himself JohnD instead of typing John Doe each time he logs in to the network. Aliases obey the same rules as other entries in the Name service. When three-part names are required, for example, the alias must have three parts divided by colons.

Groups

A **group** is a collection of named entries. Each entry in a group is a **member** of that group. Typically, a group is a collection of users that make up a distribution list for use with 3+Mail. For example, in Figure 2-1, the group Managers contains the members John Doe and Fred Jones.

Passwords

Users, administrators, servers, printers, and directories can have passwords. **Passwords** prevent unauthorized use of the network and its resources. If a user or administrator has a password, he must provide this password along with the user's three-part name. For example, if John in the above example has added the password **Mypass** to his name, he must type in that password when he logs in to the network.

```
A>LOGIN JohnD:HQ:3Com /PASS=Mypass ←
```

In this example, the password will appear on the screen when typed. You may choose to be prompted for the password and not have it shown on the screen when typed. In this case, you would log in as follows:

```
A>LOGIN JohnD:HQ:3Com ↵
Login 1.1-Copyright (c) 3Com
Corporation 1986. All rights reserved.
```

```
Password? ↵
```

You assign passwords to servers when you install the 3+Share software. When you log in to the network with a server name to perform server-user functions, you must type in the password.

3+Name Service and 3+Route or 3+NetConnect

Networks are identified by a unique network number. 3Com supplies a unique number printed on the labels of your *3+Share Name Service* diskette, as shown in Figure 2-2. Once you define the network number, do not change it or use a second number later when installing additional software.

When you add a domain to the Name service, you specify the domain's network by entering its network number. All users and servers within that domain must reside on the assigned network. The Name service can then examine a three-part name's domain and organization to determine on which network the named server or user resides.

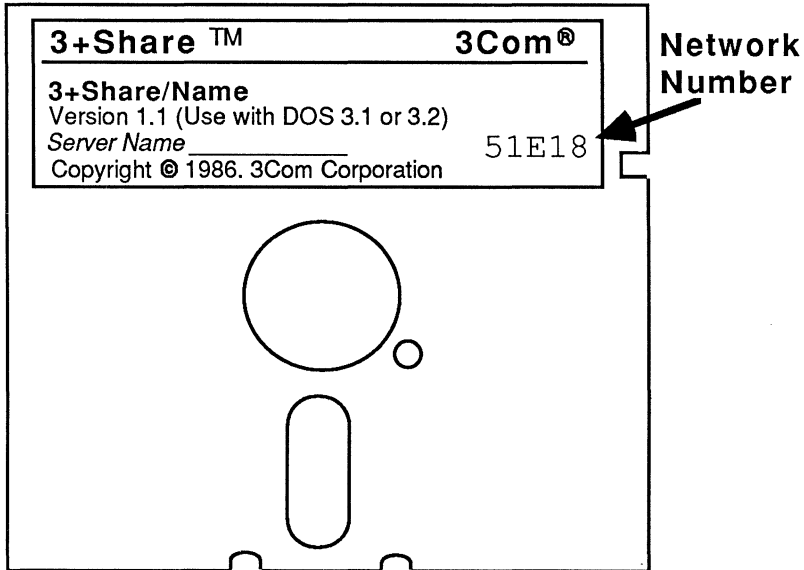


Figure 2-2. Location of the Network Number

When an application (either user or server based) needs to locate a server or user, it passes the three-part name of that server or user to the network's Name service. If the server or user resides on the same network, the Name service can locate it; if not, the appropriate 3+ service attempts to locate a 3+Route or 3+NetConnect service that can open a communications link to that other network. If the server or user name cannot be found, the message *****Name not found** will be displayed.

The 3+Share File Service

The 3+Share File service manages shared directories on the network. It is compatible with the DOS 3.1 and 3.2 file system and adheres to networking standards by licensing the official Microsoft Redirector™ module (the same code IBM® licenses for the IBM PC Network™ and the Token-Ring Network™). This module is a key part of each user's workstation software.

The 3+Share File service commands are used to share directories on the network. For complete information on 3F commands, refer to Chapter 6.



NOTE: Directories are not named in the 3+Name service, they are controlled by DOS on the 3+Share server.

Directory Structure

A **directory** is a logical grouping of entries for other directories and files on a disk. Figure 2-3 shows the DOS directory structure.

The 3+ network uses the DOS 3.1 directory structure. This structure is a hierarchical or tree structure because you begin with a root directory and then add other directories under that root. This structure makes it easy to organize files.

When you add a user to the Name service and assign him a file server, a directory is created for that user called a **home directory** (or **homedir**). The home directory can be thought of as the user's personal root directory on the network. The home directory stores all work a user does with files and programs. The directory size is not fixed, but expands as files are added. Space is allocated to directories on the server's fixed disk on a first-come, first-served basis.

A directory that is below another directory on the tree is a **subdirectory** of the one above it. In Figure 2-3, directory DIRX is a subdirectory of directory DIR2.

A **path** takes you from one directory or file on the tree to another directory or file. You access a directory on the tree by specifying the path to it. In Figure 2-3, the path from the root directory (C:\) to FILEZ is C:\DIR2\DIRX\FILEZ.

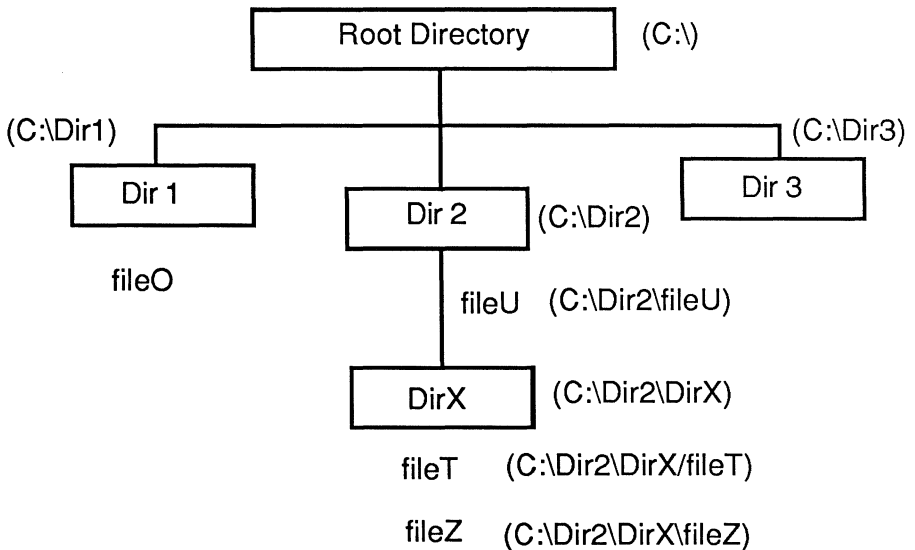


Figure 2-3. Hierarchical Structure of Directories

Specifying Paths

To specify a path when directories are shared with the 3F SHARE command, first type the name of the first directory below the home directory. Then type the name of the directory you want. For example, using the files in Figure 2-4, you would specify the path to the file SHIPMENT as **\SALES\SHIPMENT**.

When a server-user shares a directory using the 3F SHARE command, he specifies a path beginning with one of the server's disk drives. For example, he would type **C:\APPS**. The term "C:" identifies the disk drive that contains the shared directory.

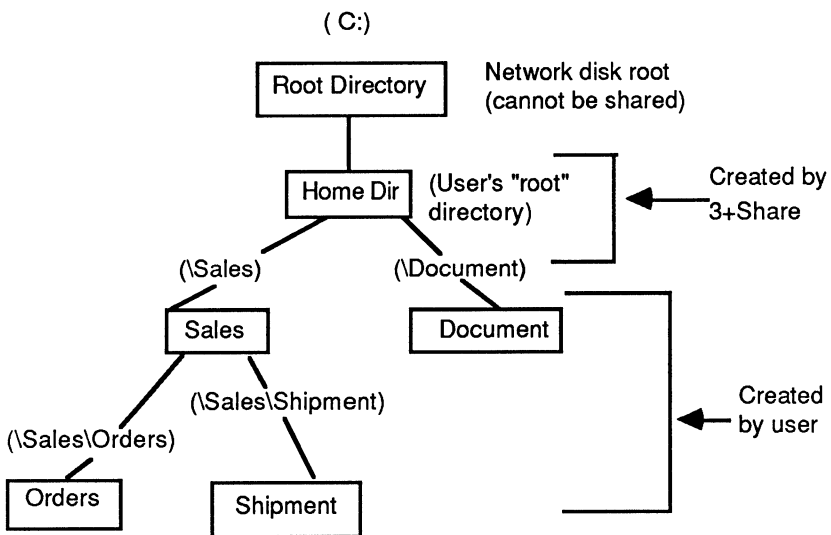


Figure 2-4. 3+Share User Directory Structure

Creating Subdirectories

You create directories using the standard DOS MKDIR (Make Directory) command. These directories reside under your home directory, and they can be used by other users only if you share them via the 3F SHARE command. If you refer to a directory that does not exist, 3F SHARE creates one for you.

Using the 3F SHARE command, a server-user can also create first-level directories. A **first-level directory** is a directory that is directly under a server's hard-disk root directory. Figure 2-5 illustrates the directory structure of a 3+Share server.



NOTE: Only a server-user can create (and share) a first-level directory using the 3F SHARE command.



NOTE: Refer to the DOS manual supplied with your personal computer for more information on directory structures, paths, and the MKDIR command.

Using 3+Share Subdirectories

Once linked to the home directory, the user can create, read, and write files and create subdirectories in the same way he would if the directory was the root directory on a local disk drive.

The user's home directory, and any directories under the home directory, can be used by other network users if the user shares them via the 3F SHARE command.

Sharing Directories

A home directory is special in that only you, the owner, can use it. Even without a password, 3+Share automatically protects your home directory for you with private access rights (PRIV). Sharing your home directory is not usually recommended, but it is possible.

When you share a directory, you also provide other users the same access to any directories and files under that shared directory.

You can share a directory that you own with other users on the network by giving the directory a **sharename** which automatically identifies the path to that directory. To use your directory, other users type in your name and this sharename.

Given this information, the 3+Name service provides transparent access to resources on the network. That is, even if a directory is moved to a different server, a user can still access it by using its sharename normally, without having to know the new server or network specifications.

The server-user can also share a directory by specifying the path to that directory. In this case, users must specify that path instead of the directory's sharename. 3Com recommends that you specify paths only when required to do so by your application.

Specifying sharenames is advantageous in that you can modify and delete sharenames that you create (and thus own). You can also give more than one sharename to a directory. Each sharename can have its own access rights and password, which lets you control who shares the directory and how it can be shared.

Sharename Access Rights

You assign **access rights** to a sharename to control how that directory can be accessed. Table 2-2 shows the access rights you can give to a sharename.



NOTE: In the following table, the reference to directories always includes its subdirectories.

Table 2-2. Sharename Access Rights

Access Right	Meaning
Private (PRIV)	Only one user at a time can access the directory via the sharename. To give other users access to a private directory, the owner must assign a password to the sharename.
Public (PUB)	Users can read files and subdirectories in a public directory but cannot create or write to files in the directory and subdirectories.
Read (R)	Users can read any files and subdirectories that are in the directory. This access right has the same effect as Public access.
Write (W)	Users can write to the files and subdirectories in the directory.
Read, Write (RW)	Users can read from and write to files and subdirectories in the directory.
Write, Create (WC)	Users can write to, create, and delete files and subdirectories in the directory but cannot read them.
Read, Write, Create (RWC)	Users can read, write to, create, and delete files and subdirectories in the directory.
Shareable (SHAR)	Users can create sharenames for the directory, as well as read, write to, create, and delete files and subdirectories in the directory.



NOTE: If you do not assign access rights to sharenames, they are given private access rights (PRIV) except for sharenames created by the server-user. Sharenames created by server-users have the default access rights of Read, Write, and Create (RWC).

Sharename Passwords

You can assign a password to a sharename to control access to the corresponding directory. If you assign a password to a sharename, other users must specify that password before they can use the directory via that sharename.

If your directory has private access rights and a password, other users can access it one at a time by supplying the password.

If your directory has private access rights and no password, no one can access it unless they log in with your user name.

Accessing 3+Share Directories

To use any directory on the network:

- ▶ The directory or one above it must have been given a sharename
- ▶ You must link that directory's sharename to a drive identifier.

Any subdirectory under a shared directory can be accessed using the standard DOS CD (Change Directory) command. For example, if you assign a sharename to the subdirectory SALES in Figure 2-4 and link to it, you can access the subdirectories ORDERS and SHIPMENT using the DOS CD command. You need not provide a separate sharename for each of these subdirectories.

Linking to a drive identifier provides a logical connection to the files in the directory. You link to directories with the 3F LINK command. When using your home directory, you link it to a drive identifier; no sharename is necessary because 3+Share automatically makes your home directory available.

The letters A: through G: are used for drive identifiers. You can increase or decrease this range using the DOS LASTDRIVE option in the CONFIG.SYS file on your workstation. Each drive identifier can be linked to a directory. When you link to a directory, the access rights given to that directory's sharename apply to you whether or not you own that directory.

When you have finished using a directory, you can use the 3F UNLINK command to **unlink** it from the drive identifier. You can then use that drive identifier to link to another directory.



NOTE: If you link to a drive identifier that represents a local disk drive, you cannot use that disk drive locally until you unlink.

The 3+Share Print Service

The 3+Share Print service is the software that manages the shared printers on your network.

For complete explanations of the 3P commands, see Chapter 6 of this guide.

- ▶ Each PC server can have up to three printers attached -- two parallel and one serial.
- ▶ A 3Server with a 3Server Port Expansion Board can have up to seven printers attached -- two parallel and five serial.

Like directories, printers are **not** named in the 3+Name service. To use a printer on the network, the server-user must share that printer using the 3P SHARE command. When a server-user shares a printer, he gives it a **printer sharename** and, optionally, a password. The printer sharename is like a directory sharename: network users specify it when they want to use that printer.

Assign logical sharenames to the printers you use on the network. For example, assign the sharename **Laserjet** to an HP LaserJet™ printer, or **Oki93** to an Okidata 93™ printer.

Linking to a Printer

Once a printer has been shared by a server-user, network users can access it by linking the printer sharename to any of the workstation **printer identifiers**: PRN: or LPT1:, LPT2:, or LPT3:.. The workstation printer identifier specified in a user link is a local identifier to which the user links a shared printer. A user can link to any shared printer on the network, up to three printers at a time.

You link to a printer using the 3P LINK command. In the example below, a printer on the server **Finance** with the assigned sharename **Laserjet** is linked to the printer identifier **LPT2:..**

```
D>3P LINK \\finance\laserjet lpt2: <—  
\\FINANCE:HQ:3COM\LASERJET linked to LPT2:
```

Print Queues

When you link to a printer and enter a command to print a file, that file is put into a print queue. The **print queue** is where print files reside on the server while they wait to be printed. Files are put into the print queue on a priority basis from 1 to 99, with 99 printing first. If you do not specify a priority, the file enters the print queue with a priority of 50. Files with the same priority are printed on a first-come, first-served basis.

Any user can change the priority of his own files relative to all files in the print queue. Administrators can change the priority of any user's files and can also move entire print queues between printers attached to the same server. When you change the priority of a file in the print queue, you must specify that file's spool identifier. A **spool identifier** is a number that identifies the file when it is in the queue.

Print queues show the spool identifier first, followed by detailed information about the print file and its status. Below is an example of a print queue viewed by issuing the 3P QSTAT command.

```
D>3P QSTAT /spool=all ←
```

```
Queue for \\FINANCE:HQ:3COM\LASERJET:
```

```
5 Size:687 Status:Printing Time:6-24-86 10:55a
  Pri:50 Copies:      Form:1
  Owner:JOHN DOE
```

```
20 Size:283 Status:Waiting Time:6-24-86 10:56a
  Pri:50 Copies:1     Form:1
  Owner:FRED JONES
```

The 3+Mail Service

The 3+Mail service enables communications between users on the network. Local and remote users can send mail to any user, alias, or group established on the 3+Name server. For users not established on that server but who are established in the 3+Name service of another network, mail can be sent (a) using 3+Route, to a remote network; or (b) using 3+NetConnect, to a directly connected network.

The 3+Mail service consists of four functions: 3+Mail user, 3+Mail Minder, 3+Mail server, and 3+Mail administrator functions.

- ▶ 3+Mail user software enables a user to send mail messages to and receive them from other users. It functions in much the same way as your mailbox at home.
- ▶ 3+Mail Minder automatically notifies a user of any pending mail and provides the user with a "hot key" to check the status of any pending mail.
- ▶ 3+Mail server software enables a server to act as a "store and forward" vehicle for all mail messages. It functions in much the same way as the post office.
- ▶ 3+Mail administrator functions allow an administrator to manage mail using 3M commands.

The functions of 3+Mail appear in Figure 2-6. For complete information on 3+Mail commands, see Chapter 6. Information concerning user functions is in the *3+Mail User's Guide*.

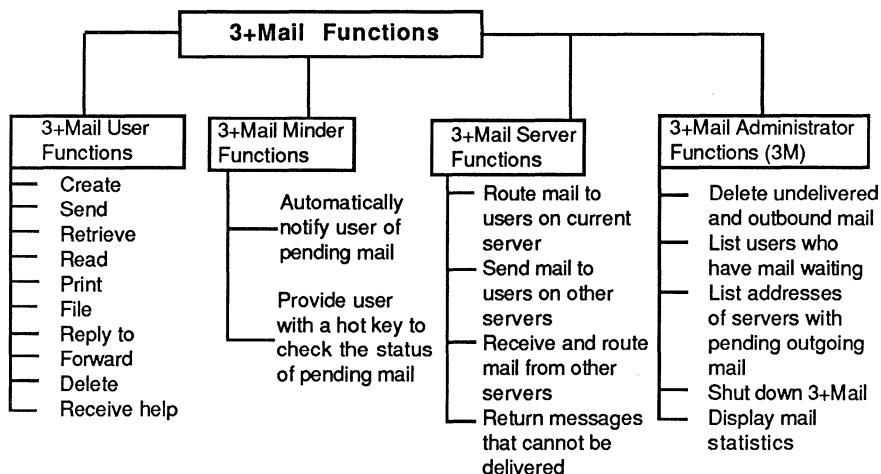


Figure 2-6. 3+Mail Functions

The 3+Start Service

The 3+Start service allows workstations to start without the use of a boot diskette. The 3+Start service software works in conjunction with an EtherStart integrated circuit, or PROM chip, that plugs into the memory socket on the EtherLink board. When a workstation equipped with an EtherStart chip is started, the system communicates with the 3+Start server and locates a special file which triggers the startup process to occur across the network.

The network administrator creates 3+Start volumes for users. These volumes can be specialized for individuals or generic for public use. Each volume contains the same files as a normal 3+ workstation startup diskette (CONFIG.SYS, AUTOEXEC.BAT, etc.) and functions in the same way. Information on creating 3+Start volumes is in Chapter 4 of this guide.

The 3+Remote Service

The 3+Remote service is the optional server software that allows remote users to access the network using modems over telephone lines. This access is the same as if the personal computer were physically attached to the network.

To use the service, you must also purchase and install the 3+Remote user software for each remote user's personal computer. A **modem** must be attached to the server that has the 3+Remote service installed, and a modem must be attached to the remote user's personal computer. For information about 3+Remote user software installation, see the *3+ Installation and Configuration Guide*; for its use, see the *3+Remote User's Guide*.

The 3+Route Service

In addition to providing 3+Remote support, the 3+Route service provides communication links to other remote 3+ networks via dial-up or direct connections. These communication links are used by the other network users and services (such as a 3+Mail service). Such services and users can thus link directly to shared objects and printers on other networks. Network users utilize the 3+Route service transparently; that is, there are no Route service commands in the way there are, for example, File service commands.

Using modems over telephone lines, the 3+Route service allows communication between 3+ networks. You can also share resources with users of other 3+ networks.

All 3+ Network services use 3+Route to communicate with their counterparts on other networks. To use resources or communicate with users on another network, the particular service needs to know if the specified resource or user is on another network, and, if so, on which network. This information is provided by the 3+Name service.

A user, on the other hand, needs to know only the name of the user (for 3+Mail and 3+File service commands) or server (for 3+File and 3+Print service commands). The commands are the same as those used to access resources or communicate with users on one's own network. For example, a user links to a directory on another network using the same 3F LINK command that links to a directory on his own network.

The 3+Route service includes the capabilities of the 3+Remote service. You never need to install both 3+Route and 3+Remote on the same server. Like the 3+Remote service, 3+Route allows a user at a remote location to dial in to a 3+ network and use the network over telephone lines. This capability makes any 3+ network as close as the nearest telephone.

The 3+NetConnect Service

The 3+NetConnect service provides a high-speed bridge between Token Ring and Ethernet networks on both 3Server and PC servers. This service also supports Token Ring to Token Ring and Ethernet to Ethernet high-speed internetwork bridges on PC servers. Connections between networks are made directly, without the use of modems.

With 3+NetConnect, access to resources on the other network is transparent to the local user. The user gains access to resources on the other network by using the same conventions as if the resource were local.

The 3+NetConnect service does not include the functions of 3+Route and 3+Remote. To communicate with remote networks and/or remote users, you must have the 3+Remote or 3+Route service installed separately on the network.

For complete information on installation and administration of the 3+NetConnect service, see the *3+NetConnect Supplement*.

The 3+3270 Service

With 3+ communications, your options do not stop with electronic mail, remote PC access, or remote internetwork communications. With 3+3270, any 3+ workstation can access a mainframe in an SNA environment for information retrieval, transaction processing, scheduling; and other mainframe-based applications. Once information is downloaded from your mainframe, you can use all the features of your 3+ network to distribute and share the information. Data files downloaded from the mainframe can be stored on a local disk in the workstation or on a network drive. Once the information is stored on the network, you can use 3+Mail, 3+Route, and 3+Remote to distribute the information to any 3+ network user or printer.

The 3+3270 service works by dedicating a server to manage network access to the IBM mainframe. With 3+3270, any user on the 3+ network can access the IBM host from his own workstation. This service supports up to 32 simultaneous sessions with the IBM host.

Complete information on installation and administration of the 3+3270 service can be found in the *3+3270 Administrator's Guide*.

Chapter 3: Learning About 3+Commands

Each 3+ service -- 3+Share File and Print, 3+Name; 3+Remote, 3+Start and 3+Mail -- has its own commands. Different prefixes indicate the service to which each command belongs:

- ▶ 3+Name service - 3N
- ▶ 3+Share File service - 3F
- ▶ 3+Mail service - 3M
- ▶ 3+Share Print service - 3P
- ▶ 3+Start service - 3S
- ▶ 3+Backup service - 3B



NOTE: The 3+Route service has no specific commands. 3R commands for the 3+Remote are for user functions of 3+Remote only. For information concerning 3R commands, consult the *3+Remote User's Guide*.

The LOGIN and LOGOUT commands are stand-alone programs and do not belong to a particular service. You can enter the LOGIN and LOGOUT commands from DOS or from the Name, File, or Print services.

Conventions Used in this Guide

Key Spellings

↵ is used for the Return or Enter key.

All other keys in this guide are shown as they are spelled on your keyboard; for example, [Esc] stands for the Escape key.

Key Combinations

If two or more keys are to be pressed simultaneously, the keys are linked by a plus (+) sign, for example:

Press [Ctrl]+[Alt]+[Del] to restart the server.

Drive Identifier Conventions

We recommend that you follow certain conventions when setting up users on your 3+ network. These recommendations are detailed in Chapter 4. All examples in this guide assume the use of drive identifiers following these conventions:

- D: linked to the APPS directory
- E: linked to the user's home directory
- F: linked to shared data directories, if any
- G: linked to applications requiring /RWC access rights to application program files, if any

If you set up users with links other than those specified above, the drive identifiers used in this guide will not correspond.

Examples

Anything you must type is shown in blue, typewriter-like letters, for example:

LOGIN admin ◀—

Command Syntax Notation

The following notation is used to describe the syntax of commands used in this guide.

CAPITAL LETTERS are used for key words. Enter key words exactly as they appear here. Case is not significant in key words: you can use UPPERCASE or lowercase as you prefer.

Italics indicate parameters for which you supply the particular information or value. For example, for the *prntername* parameter, you would supply the name of the desired printer.

[parameter] is optional when enclosed in square brackets. If you supply a value for an optional parameter, do not type square brackets around the value.

PROMPT? parameter appears onscreen in the course of service commands. When prompted, you enter the particular information requested. If the parameter has an existing or default value, the value is displayed (enclosed within parentheses) between the end of the prompting text and the question mark (?).

[/OPTION] is an optional key word that you can include on the command line to alter the operation of the command. Optional key words allow you to use a single command in several different ways. When the number of optional key words and optional parameters is large, the options are stacked one below the other, each enclosed in square brackets ([]). Within the same command, you can enter as many of the optional key words as required. Do not enter the square brackets.

A vertical bar (|) represents an exclusive choice; you choose only one of the items separated by bars. For example, in the expression `item1|item2|item3`, you would enter one, and only one, of those items on the command line.

Slashes (/), backslashes (\), parentheses (()), and colons (:) must be entered as shown in the command descriptions.

Command Parameters

Each 3+ command consists of the command itself and several parameters that provide additional information about the command. The following sections tell you how to enter parameters in general. For information on specific 3+ command parameters, see Chapter 6.



NOTE: Case is not significant with names and other parameters. For example, the following are all equivalent: "mydir", "Mydir", "MyDir", "mYdIR", and "MYDIR".

Most 3+ commands are available within 3+Menus for both the network administrator and the user. The following describes these commands and their parameters outside the 3+Menus environment.

File and Print Service Parameters

You can enter File service and Print service commands and parameters in three different ways:

1. Type the command, including its parameters, and press **[Return]**. For example:

```
D>3F SHARE apps=c:\apps /PASS=qwx /PUB <—
\\FINANCE:HQ:3COM\APPS shared.
```

If you do not enter all of the required parameters on the command line, the service prompts you for the missing one(s).

2. Type the command and press **[Return]**. The service then prompts you for the required parameters only. For example:

```
D>3F SHARE <—
Sharename? apps <—
Path? c:\apps <—
\\FINANCE:HQ:3COM\APPS shared.
```

3. Type the command, a space, a question mark (?), and press **[Return]**. The service then prompts you for all the command's parameters, required and optional. Default values appear in parentheses (). To keep a default, press **[Return]**. To replace it, type in a new value. To delete it, press **[Esc]**. For example:

```
D>3F SHARE ? <—
Sharename? apps <—
Path? c:\apps <—
Password? qwx <—
Access Rights (/RWC)? /PUB <—
\\FINANCE:HQ:3COM\APPS shared.
```

Name Service Parameters

You can enter 3N commands and the name parameter (such as the name of a user or server) on the command line. The Name service then prompts you for any further information it needs to complete the command. For many 3N commands, however, you cannot enter *all* the parameters on the command line as you can for all File service and Print service commands.

For example, to add a user to the Name service, you would type the 3N ADD USER command and the name of the user you are adding. The Name service prompts you for a comment about the user, capability class, File Server, home directory, home directory disk drive, and Mail Server.

```
D>3N ADD USER Chris Jones ◀
Adding User Chris Jones:HQ:3Com ...
Comment? assistant supervisor for finance ◀
CapabilityClass (U)? ◀
3ShareServer? finance ◀
HomeDir? cjones ◀
File Server Drive? c: ◀
3MailServer (Finance:HQ:3Com)? corporate ◀
User Chris Jones:HQ:3Com added.
Adding Chris Jones:HQ:3Com to Share Server
Finance:HQ:3Com ...
Adding Chris Jones:HQ:3Com to Mail Server
Corporate:HQ:3Com ...
```

In the above example you supplied the user name Chris Jones on the command line, and the Name service prompts you only for the parameters you cannot enter on the command line.

You can also enter a Name service command without the name parameter. In this case, the service prompts you for the name as well as additional information. For example:

```
D>3N ADD USER 
User Name?chris jones 
Adding User Chris Jones:HQ:3Com ...
Comment? assistant supervisor for finance 
CapabilityClass (U)? 
3ShareServer? finance 
HomeDir? cjones 
File Server Drive? c: 
3MailServer (Finance:HQ:3Com)? corporate 
User Chris Jones:HQ:3Com added.
Adding Chris Jones:HQ:3Com to Share Server
Finance:HQ:3Com ...
Adding Chris Jones:HQ:3Com to Mail Server
Corporate:HQ:3Com ...
```

Default Values and Parameters

Many of the 3+Share command parameters have **default values** which are used if you do not specify another value. Default values for specific parameters are described in Chapter 6.

If you use a form of a command that prompts for parameters, any default value for any parameter is displayed in parentheses following the prompt (as shown in the previous examples of the 3N ADD USER command). You can accept the default value by pressing **[Return]**, or you can type in a different value and then press **[Return]**. Not all parameters with defaults are required. If you want to clear the default value without specifying another value, press **[Esc]** and then press **[Return]**. If the parameter requires a value, a message will be displayed and you will be prompted again.


```
D>3N ADD USER ◀
User Name? chris jones ◀
Adding User Chris Jones:HQ:3Com ...
Comment? assistant supervisor for finance ◀
CapabilityClass (U)? ◀
3ShareServer? finance ◀
HomeDir? cjones ◀
File Server Drive? c: ◀
3Mail Server (Finance:HQ:3Com)? [Esc] ◀
User Chris Jones:HQ:3Com added.
Adding Chris Jones:HQ:3Com to Share Server
Finance:HQ:3Com ...
```

Command Usage

The following sections provide general information on using commands.

Multiple Commands

You can type more than one command on a single line by separating each command with a semicolon (;), provided the commands are all within the same service. For example:

```
D>3F LINK e ; LINK d: apps ◀
```

You do not need to enter the service prefix for the second and subsequent commands on the same line. If you are already in a service before you begin the command line, you do not need to enter the service prefix for the first command either. For example:

```
D>3F ◀
3F>LINK e ; LINK d: appen
```

Wildcard Characters

In certain 3+Share commands, you can use an asterisk (*) as a wildcard character in place of a parameter or part of a

three-part name. Such an asterisk matches any string of characters.

This is most useful with the various DIR commands. For example, if you want to see all the entries in the Name service beginning with "ser", you can use asterisks in the 3N DIR command as shown:

```
D>3N DIR ser*:asd:3com
```

This will display all names within the domain and organization ASD:3COM that begin with "ser".

```
D>3N DIR F*J*
```

This will display all names within your default domain and organization that begin with "F" and have a last name beginning with "J", such as "Fred Jones".

```
D>3N DIR *:hq:3com
```

This will display all names within the domain and organization "hq:3com".



NOTE: If you are unsure of whether you can use an asterisk in a command, or you are unsure of its effect, see Chapter 6 of this guide or Part II of the *3+Share User's Guide*.

If you do not specify the domain and organization, the service will default to the last ones specified. If none is ever specified, the service will use your own domain and organization. If you want to see information about a domain or organization other than the one you last specified, you must type the domain and organization name.

The /NP Parameter

The /NP (no prompt) parameter is used with 3+Share commands that request verification before performing their function. You can use this parameter to suppress the prompt for verification and when commands are executed from a batch file.

You can type this parameter anywhere in the sequence of command parameters. It must be entered as /NP, including the slash (/).

Correcting Errors

If you make a mistake while typing a command, use the **[Backspace]** key to erase the error, then type the correct letter or letters.

Canceling Commands

If you begin a command and do not want to complete it, press the **[Esc]** key to cancel the command and return to the DOS prompt. If you are entering the prompted form of a command, you can cancel the command at any time before you type the last response and press **[Return]**. If you are entering the unprompted form of a command, you must cancel the command before you press **[Return]**.

If you press the **[Esc]** key in response to a prompt with a displayed default value, you must press the **[Esc]** key a second time to cancel the command. The first time clears the default value but does not cancel the command. The second time cancels the command.

Entering Commands from DOS

When you enter commands following the DOS prompt, you must include the service prefix for that command. For example:

```
D>3F UNLINK f: ◀
```

Entering a Service

If you type just a prefix (3F, 3P, 3M, or 3N) and then press **[Return]**, you enter that service and see the service prompt. For example:

```
D>3F ←
3File 1.1 - Copyright (c) 3Com Corporation
1986. All rights reserved.
```

```
3F>
```

Following a service prompt, you can only enter commands for that service. Do not include the prefix if you are entering commands following a service prompt, for example:

```
3F>DIR ←
```

Returning to DOS

To return to DOS from any service, press **[Return]** without typing a command. For example:

```
3F> ←
```

```
D>
```

If you enter the next service prefix and a command on the same line, you return to DOS when the command is completed. For example:

```
D>3N DIR ORG ←
Finding Organizations * ...
3COM
```

```
D>
```



NOTE: To execute several commands in the same service, it is more efficient to enter the service and all the commands, one after the other, so that you do not return to DOS after each command.

To move from one service to another, you must exit the first service and then enter the second. For example:

D>**3F** 

3File 1.1 - Copyright (c) 3Com Corporation
1986. All rights reserved.

3F>

D>**3P** 

3Print 1.1 - Copyright (c) 3Com Corporation
1986. All rights reserved.

3P>

Getting Help

To get information on the 3+Share commands for a particular service, type **HELP** or a question mark (?) after a service prompt. The **HELP** command displays a list and description of the service's commands. A question mark (?) only lists the commands.

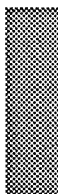
You can get information on a specific command by typing **HELP** either before or after that command, for example:

3F LINK HELP

or

3F HELP LINK

You can get information on a particular parameter by using the prompted form of a command and typing **help** or a question mark (?) when prompted for that parameter.



Chapter 4: Setting Up Network Services

This chapter tells you how to set up the 3+ services on your network. Before you set up any of the services, you must have installed the server software. For installation instructions, refer to the 3+ *Installation and Configuration Guide*.

Follow the steps in this chapter to set up the services on your network. This chapter explains:

- ▶ Using 3+Menus to set up services
- ▶ Drive identifier conventions
- ▶ 3+ services setup procedures
- ▶ 3+Name service entries listing
- ▶ Network services testing
- ▶ Problem solving



NOTE: Use the examples in this chapter as guides when you set up each of the services on your network. Substitute your own names as you set up services.

For general information about using 3+ commands, see Chapter 3. For information about syntax of administrator and server-user commands used in these examples, see Chapter 6. For more information on the 3+ user commands used in these examples, see the *3+Share User's Guide*.

Using 3+Menus to Set Up Services

The 3+Menus service provides preconfigured sub-menus to help you administer the network. 3Com recommends that both administrators and end-users use 3+Menus as the primary user interface to the network.

The 3+Menus service can be tailored to meet a variety of needs on the network. Administrator menus include options to execute Name service (3N), File service (3F), Print service (3P), and 3Server 3+Backup service (3B) commands. You can customize these menu files to provide various levels of access by end-users to network services. The *3+Menus Reference Guide* provides complete information on customizing and setup of 3+Menus.

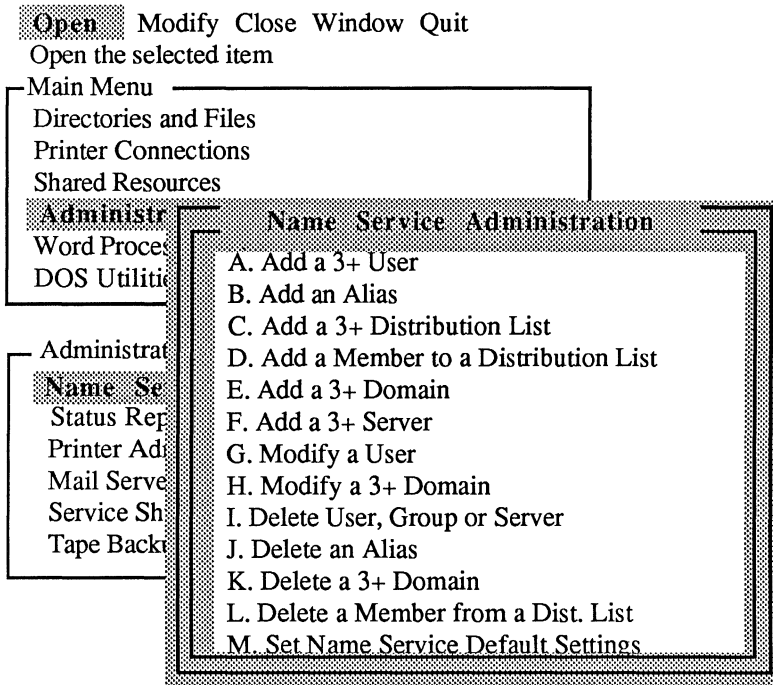


Figure 4-1. 3+Menus Administrator Menu Example

Figure 4-1, above, presents an example of a 3+Menus administrator menu screen. Table 4-1, below, details the specific administrator commands used in each of the seven different administrator menus: ADMIN.MNI through ADMIN6.MNI. The master menu, ADMIN.MNI, contains submenu items for each of the other administrator menus.

Table 4-1. 3+Menus Administrator Functions

Menu File	Items	3+ Command
ADMIN.MNI Master Admin Menu	Name Service Administration Status Reports, Lists Printer Administration Mail Server Administration Service Shutdown Tape Backup	See below See below See below See below See below See below
ADMIN1.MNI Name Service Administration	Add a 3+ User Add an Alias Add a 3+ Distribution List Add a Member to a Distribution List Add a 3+ Domain Add a 3+ Server Modify a User Modify a 3+ Domain Delete User, Group or Server Delete an Alias Delete a 3+ Domain Delete a Member from a Distribution List Set Name Service Default Settings	3N ADD USER 3N ADD ALIAS 3N ADD GROUP 3N ADD MEMBER 3N ADD DOMAIN 3N ADD SERVER 3N MOD USER 3N MOD DOMAIN 3N DEL 3N DEL ALIAS 3N DEL DOMAIN 3N DEL MEMBER 3N SET ?
ADMIN2.MNI Status Reports, Lists	View Directory of Users View Directory of Servers View Directory of Groups View Directory of Aliases View Directory of Directories Display Server Disk Status Display Server Printer Status Show Users Linked to a Server Show Users Linked to a Directory Show Users Linked to a Printer	3N DIR USER 3N DIR SERVER 3N DIR GROUP 3N DIR ALIAS 3F DIR 3F STAT 3P STAT 3F DIR /LINK 3F DIR /LINK 3P DIR /LINK

continued

Table 4-1. 3+Menus Administrator Functions

continued

Menu File	Items	3+ Command
ADMIN3.MNI Printer Administration	Link a Printer List Printers Currently Linked List Queue Status for Linked Printer Printer Status Report Display Status of a Print Job Delete a Print Job From Queue Move Print Jobs Stop Network Printer Resume Network Printer Operation	3P LINK 3P DIR /LINK 3P QSTAT 3P STAT 3P QSTAT /SPOOL= 3P DEL /SPOOL= 3P MOVQ 3P STOP [/LINK] [/NEW] 3P RESUME [/BANNER] [/NEW] [/PF] [/FORM=]
ADMIN4.MNI Mail Server Administration	Show Unretrieved Mail Show Mail Outbound to Other Servers Delete User's Undelivered Mail Delete First Unretrieved Message Only Delete Mail Outbound for Other Server Mail Server Status Report	3M DIRM 3M DIRO 3M DELM 3M DEL 1M 3M DELO 3M STATUS
ADMIN5.MNI Service Shutdown	Mail Service Shutdown File/Print Server Shutdown Name Service Shutdown	3M SHUTDOWN 3F SHUTDOWN 3N SHUTDOWN
ADMIN5.MNI Tape Backup	Backup Restore Create Directory Listing Erase Backup Tape Review Log Delete Log Change Default Server Check Backup Server Status Cancel Backup	3B BACKUP ? 3B RESTORE ? 3B DIR ? 3B ERASE ? 3B LOG ? 3B LOG /D 3B SERVER 3B STATUS ? 3B CANCEL ?

In addition to administrator functions, most user functions are directly available from within the 3+Menus Directory, File services, and Shared Resources utilities. For complete information on the functions of 3+Menus, see the *3+Menus Reference Guide*.

Drive Identifier Conventions

By defining conventions for the drive letters by which users will refer to shared directories, you can easily set up batch files or public menus for many users. Application software often requires a configuration that defines where data is expected to be (e.g., the `/Worksheet-Global-Default-Directory` command in Lotus 1-2-3™). By standardizing drives and directory names, you don't have to reconfigure these applications for each user.

3Com recommends assigning drive letters D: through G: as follows:

- ▶ Link D: to the APPS directory
- ▶ Link E: to the user's home directory (HOMEDIR)
- ▶ Link F: to shared data directories, if any
- ▶ Link G: to application directories, if any

Note that D: and E: are always linked. When designing batch files or menu selections, try not to violate this convention.



NOTE: The following pages describe setting up all 3+ services in the order we recommend. If you did not purchase or do not want to set up a particular service, just go on to the next one.

Setup procedures are described for the following services:

- ▶ Name service
- ▶ File service
- ▶ Print service
- ▶ 3+Mail service
- ▶ 3+Start service
- ▶ 3+Remote service
- ▶ 3+Route service
- ▶ 3+Backup service

Name Service Setup

The Name service manages names for the network. When you set up the Name service, you create entries for users and other groups that do not create their own entries (that is, special interest groups, domains, and organizations). Entries for servers are created automatically when you assign their names at installation.



NOTE: You need to add domains and organizations to the Name service only if you want more than the default domain and organization you assigned at installation.

You may use international characters when naming entries in the Name service.

Naming Conventions

Consistency in assigning user, alias, domain, and organization names is an advantage as your network grows.

Recommendations follow for defining user, alias, domain, and organization names.

User Names

Define user names as full names. Combined with the domain name and organization name, the user name uniquely identifies one user in your organization, even if you have several domains around the world. The Name service preserves capitalization as names are defined, so for best appearance, standardize on "natural" capitalization. In normal use, of course, a user can enter his user name in any combination of upper- and lowercase. For example:

Jeff Perez:Bldg3:My Company



CAUTION: Certain words are reserved by the Name service and should not be used as server or user names. Their use may cause unexpected and undesirable results when attempting to use 3N commands. These words are: USER, SERVER, GROUP, ALIAS, PROP, SYS, MEMBER, DOMAIN, and ORGANIZATION (or ORG).



NOTE: Three-part names are limited to 58 characters total, including colons(:). See the "Three-Part Name Syntax" section later in this chapter.

Aliases

Aliases provide shorter user names for use within a local group of people. Across large organizations, the 3+ three-part naming scheme lets you define unique user names within a particular domain; however, aliases are often more convenient.

We recommend that you assign each user at least one alias in the form of first name together with last initial, using a maximum of eight characters. For example:

JeffP

The eight-character limit assures the name is short, and it provides compatibility with other naming schemes using similar restrictions (such as the IBM Machine Name and the DOS Directory name).



NOTE: If two users have the same first name and last initial, **do not assign an alias of this form to either user.** You can, instead, use just a last name. If you try to assign the same alias to two users, the Name service will return the message **Name already exists.**

You can also use last names as a second alias. Backup alias names help when users on larger networks do not know the target user's first name or are unaware of duplicate users with the same first names and last initials. If two users had the name Jeff P (Jeff Parker and Jeff Perez), using their full last names as aliases would indicate which Jeff P you wanted, for example:

Perez

To avoid confusion, keep your alias scheme consistent and accurate. Do not, for example, create an alias John Smith for John Smythe just because some people might spell his name that way. This will eventually lead to confusion.

Domains and Organizations

When choosing domain and organization names, **consistency** should be your first priority. Designing names that are **recognizable** should be your second priority, and **brevity** should be third. If you have sales offices in many cities, use the city's full name (i.e., DALLAS is preferred over DAL) whenever possible.

■ Step 1: Login First Time

Before you can set up the Name service, or any other service, you must log in to the network at a workstation. The 3+Share software automatically creates an initial user with administrator capability when you install the server software. This initial user is named **Admin**, and his domain and organization are the default domain and organization you assigned when you installed the Name service.

1. Insert the *3+Share User #2* diskette in drive A:.
2. Use the LOGIN command to log in to the network, for example:

```
A>LOGIN admin ←  
Login 1.1-Copyright (c) 3Com  
Corporation 1986. All rights reserved.
```

```
Admin:HQ:3Com logged in.  
A>
```

You are now logged in to the network.

Step 2: Assign a Password

The initial user **Admin** has no password. We recommend that you assign **Admin** a password to protect your network from unauthorized use of the 3N MODIFY user command.

1. Enter the Name service by typing:

```
A>3N   
3Name 1.0 - Copyright (c) 3Com  
Corporation 1986. All rights reserved.  
3N>
```

2. Type the 3N MODIFY command:

```
3N>MODIFY   
Password? pass   
User Admin:HQ:3Com modified.  
3N>
```



CAUTION: Your new password will never be displayed once when you enter it, so remember to write it down and store it in a safe place.

Step 3: Assign a Home Directory



NOTE: If you have installed an unlimited-user version of the 3+Share software, continue with this step. If you have installed the five-user version, proceed to Step 4.

We recommend that you assign the initial user, **Admin**, a home directory from which to use 3F, 3N, 3M, and 3P Administrator commands. Use the 3N MODIFY command and type the name of the server in which you want the home directory to reside at the **3ShareServer** prompt.

After you reply to the **3ShareServer** prompt, the service will prompt you for the name of your home directory, the file server drive in which it will be located, and the 3+Mail server that will be used if you are running 3+Mail.



NOTE: The server you specify at the **3ShareServer** prompt must have 3+File and Print software installed and be operational. If you assign the Admin user a 3+Mail server, that server must also have 3+Mail installed and be operational.

1. Type the 3N MODIFY command specifying the user name ADMIN.

```
3N>MODIFY admin <—  
Looking for Admin:HQ:3Com ...  
Comment? <—  
Password (****)? <—  
CapabilityClass (A)? <—  
3Mail Server? <—  
3ShareServer? finance <—  
HomeDir? admin <—  
File Server Drive? c: <—  
User Admin:HQ:3Com modified.
```

```
3N>
```

Step 4: Add Organizations and Domains

The default domain is established when you install the server software. If you want additional domains on your network, you must add them to the network before adding anything, including users, to these domains.

Remember that domains represent geographical locations or part of a company. If you have purchased 3+Route and are setting up a network over more than one geographical location, you need to add domains and organizations to each Name service.

Organizations are added at the same time as domains. An organization must contain at least one domain in order to be added to the Name service. If you want to add a domain with a new organization, simply specify the two-part name as shown in the example below.



NOTE: If you need only one domain and organization, skip to the next section, "Step 5: Add Users."



NOTE: Use the conventions discussed in the "Name Service Setup" section of this chapter when adding domains and organizations.

1. The following exemplifies adding a new domain and organization to the Name service.

```
3N>ADD DOMAIN ←
```

```
Domain Name? newdomain:othercorp
```

2. The Name service then displays the current network number and prompts you to enter a different network number if appropriate. A network number is a number unique to each network and is printed on the label of the *3+Share Server/Name* diskette. You need to enter a different network number only when you add organizations or domains that belong to another network; in the example below, no new number is needed, so the Admin user presses **[Return]** instead.

```
Net Number (00040004)? ◀  
Adding domain newdomain:othercorp ...  
Domain newdomain:othercorp added.  
3N>
```

Repeat for each domain and organization you want to add to the network.



NOTE: When you add an organization, you must also add a domain; you cannot have an organization that does not have a domain. If you type in only one name in response to the **Domain Name** prompt, the service merely adds a domain by that name to the current organization.

3. The following example adds new domains to the current organization on the Name service.

```
3N>ADD DOMAIN ◀  
Domain Name? Seattle ◀  
Net Number (00040009)? 00040017 ◀  
Adding domain Seattle:3Com ...  
Domain Seattle:3Com added.  
3N>
```

Repeat for each domain you want to add to your current organization.

Step 5: Add Users

You add users to the network's default domain and organization with the 3N ADD USER command. Refer to the example procedures below.

If your network has more than one domain and organization, it is easiest to add users within the same domain and organization at the same time. Since your default domain and organization at any given time are set to either your login domain and organization, or the last domain and organization you specified, you need to specify the domain and organization only with the first addition if all the new users are in the same domain.



NOTE: When you add users, we recommend you follow the conventions discussed in the "Name Service Setup" section of this chapter.



Three-Part Name Syntax

The rules for forming each part of a three-part name are as follows:

- ▶ Name must be 1 to 40 characters long.
- ▶ Domain must be 1 to 20 characters long.
- ▶ Organization must be 1 to 20 characters long.
- ▶ Each part is separated from the next by a colon (:).
- ▶ The total length of all three parts cannot exceed 58 characters including the two required colons (:).
- ▶ The characters allowed for each part are:
 - the letters A to Z and a to z
 - the digits 0 to 9
 - the special characters dash (-), underscore (_), period (.), and blank ()
 - the international characters supported by the IBM PC
- ▶ Each part can contain embedded blanks. However, the service reduces multiple consecutive blanks to a single blank. No blanks are allowed next to a colon (:).

Case and Comparisons

When you add an entry to the Name service, that name is recorded as entered. Any capitalization you enter is retained and used for displays, but not for comparisons; that is, the Name service overlooks capitalization when it compares two names.

For example, the following are all considered to be the same name: "John Doe:NorthWest:3Com", "JOHN DOE:NORTHWEST:3COM", and "john doe:northwest:3com".

1. Add users, using first and last names. If two users have the same first and last name, add each user's middle initial.

```
3N>ADD USER ◀  
User Name? James Jacobs ◀  
Adding user James Jacobs:HQ:3Com ...
```

2. You can add remarks or notes about a user when the ADD USER command prompts you for a comment. For example, you may want to type in user's job title.

```
Comment? supervisor of finance ◀
```

3. Assign user capability (U) to all users unless you are giving administrator privileges (A) to another user.

```
CapabilityClass (U)? ◀
```

4. If your network uses 3+Mail, specify the three-part name of the 3+Mail server. The server you specify must have 3+Mail installed and be operational.

```
3MailServer (Finance:HQ:3Com)? corporate ◀
```

5. Specify the server name in which the user's home directory will reside. The 3+Share service then creates the user's home directory. The server you specify must have already been installed and exist in the Name service, and the server must be operational.

```
3ShareServer (Corporate:HQ:3Com)? finance ◀
```

6. Specify the name of the home directory that will be created for the user. The name must be unique on the server and must be from one to eight characters long. To establish a convention for keeping home directory names unique, you might use the first initial and the first seven letters of each user's last name.

HomeDir? **jjacobs** ←

7. Specify the letter of the disk drive on which you want to create the user's home directory. It must represent a disk drive on the user's home directory server, and that disk drive must have been defined during CIOSYS installation.

File Server Drive? **c:** ←

User James Jacobs:HQ:3Com added.

Adding James Jacobs:HQ:3Com to Share Server
Finance:HQ:3Com.

Adding James Jacobs:HQ:3Com to Mail Server
Corporate:HQ:3Com.

NOTE: If you see the message **server not responding, add/delete to Name service anyway [Y/N]?**, type **n**. Make sure the server specified (Mail or Share) is operational and try adding the user again. This is necessary to keep the Mail server inboxes and home directory information synchronized with the Name service.

8. Repeat these steps for all the users you are adding to the Name service.

9. Create another user with administrator capabilities. If the user **Admin** should accidentally be deleted or a password forgotten, you can log in as this other user to perform administrator functions.

NOTE: This example does not add a home directory for the backup administrator user. If you have installed an unlimited-user version of 3+Share, it is a good idea to assign a home directory. If you do not assign a home directory, you must use the *3+Share User #2* diskette in a floppy drive of your PC whenever you log in as this user and want access to the services.

```
3N>ADD USER ◀
User Name? Backup Admin ◀
Adding user Backup Admin:HQ:3Com ...
Comment? Backup user with administrative
capabilities ◀
CapabilityClass U)? a ◀
3Mail Server (Finance:HQ:3Com)? [ESC] ◀
3ShareServer? ◀
User Backup Admin:HQ:3Com added.
```

3N>

Step 6: Add Aliases

You can add aliases with the 3N ADD ALIAS command. Servers as well as users can have aliases; however, aliases are usually nicknames for users. Aliases are three-part names that obey the same rules as the original names and are used in their place.



NOTE: If you plan to use applications designed for the IBM PC network, you should either use server names that are compatible with the IBM naming conventions (15 or fewer alphanumeric characters) or assign an alias for the server that meets this criterion.

```
3N>ADD ALIAS 
Alias Name? MaxM 
Name? Randy M Maxey 
Adding Alias MaxM:HQ:3Com for
Randy M Maxey:HQ:3Com ...
Alias MaxM:HQ:3Com added.
```

```
3N>
```



NOTE: To make changes in an alias, you must delete the alias from the Name service, then add the new alias; use the 3N DEL ALIAS and 3N ADD ALIAS commands. See Chapter 6 for details on using these commands.

File Service Setup

On each File service server, we recommend you set up a directory called APPS that all network users can access. This public directory will contain programs such as the 3+Share user software, LOGIN and LOGOUT, and application programs, such as word processing, that you want to make available to network users.

While users can share their directories with other network users, the APPS directory is set up and maintained by the server-user.

In addition to sharing the APPS directory, it is important to share the \3PLUS\CONFIG directory. This directory contains the 3INSTALL program used to modify parameters for 3+ services.

The general steps below are discussed in detail on the next few pages:

1. Assign the APPS directory the sharename **APPS** and give users public (read-only) access to the directory and its subdirectories.
2. Assign an additional sharename, **APPSADMN**, to the directory APPS with Read-Write-Create access and a password.
3. Create several subdirectories under the APPS directory. In the DOS subdirectory, for instance, put all DOS files (DISKCOPY, FORMAT, and so on). In the MENUS subdirectory should be public menus and the menu programs. Each application goes in its own directory.
4. Share the \3PLUS\3CONFIG directory, assigning a password and private access rights.

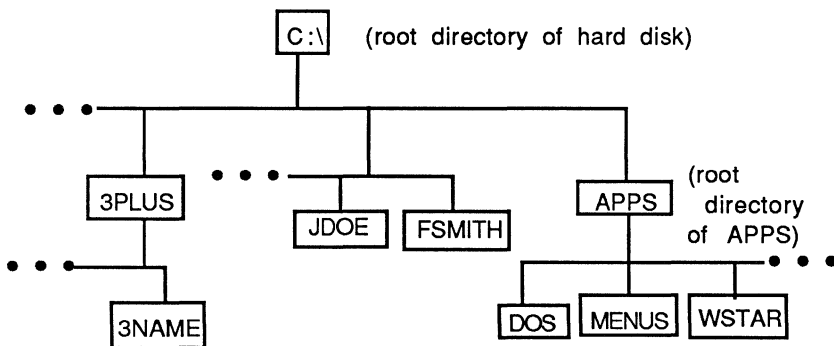


Figure 4-2. File Service Directory Structure

Keep the root directory of APPS as uncluttered as possible. It should contain the following files:

- 3N.EXE (3+Name service command program)
- 3F.EXE (3+File service command program)
- 3P.EXE (3+Print service command program)
- 3M.EXE (3+Mail service command program)
- LOGIN.EXE (3+ LOGIN command program)
- LOGOUT.EXE (3+ LOGOUT command program)
- MAIL.EXE (3+Mail user program)
- A batch file to start each resident application (optional)

Step 1: Log in as Server-User

Creating a first-level directory such as the APPS directory is a server-user function. To set up this directory, you need to log in as the server-user for the server to which the APPS directory is being added. If you gave the server a password at installation, you must supply it to log in.

1. Insert the *3+Share User #2* diskette in drive A:.
2. Log in as the server-user.

```
A>LOGIN finance 
Login 1.1-Copyright (c) 3Com
Corporation 1986. All rights reserved.
```

```
Password? pass1 
finance:HQ:3Com logged in.
A>
```

3. Enter the File service.

```
A>3F 
3File 1.1-Copyright (c) 3Com
Corporation 1986. All rights reserved.
3F>
```

Step 2: Create the APPS Directory

You create the APPS directory and give it a sharename using the 3F SHARE command. The example below assigns the sharename **APPS** to the public APPS directory and the sharename **APPSADMN** to the APPS directory.



NOTE: Make sure you are working within the File service before proceeding with these commands. The prompt should be **3F>**.

1. Use the **3F SHARE** command to create the public **APPS** directory and respond to the command prompts exactly as shown below.

```
3F>SHARE ? 
Sharename? apps 
Path? c:\apps 
Password? 
Access (/RWC) ? /PUB 
\\FINANCE:HQ:3COM\APPS shared.
3F>
```

2. Use the **3F SHARE** command to create a second sharename, **APPSADMN**, for the **APPS** directory, giving it a password and keeping the default Read-Write-Create access rights. You can use this second sharename to install and maintain application software. **APPSADMN** should have a password to prevent unauthorized users from accidentally or purposely damaging files in this public data area.

```
3F>SHARE? 
Sharename? appsadm 
Path? c:\apps 
Password? password 
Access (/RWC) ? 
\\FINANCE:HQ:3COM\APPSADMN shared.
```

```
3F>
```

3. Link to APPSADMN so that you can add files to it. Respond to the command prompts exactly as shown below, and then press [Return] to return to DOS (A>).

```
3F> LINK ? ◀
Drive Id? d: ◀
Sharename? appsadmn ◀
Password? password ◀
D: linked to \\FINANCE:HQ:3COM\APPSADMN.
```

```
3F> ◀
A>
```

4. Make drive D: the current disk drive.

```
A>d: ◀
D>
```

5. Copy 3+Share user software.

- a. Insert the 3+Share User #2 diskette into drive A:.
Type:

```
D>COPY a: *.* ◀
```

This copies all the files from the diskette to the APPS directory.

- b. Insert the 3+Share User #1 diskette into drive A:.
Type:

```
D>COPY a:\compat\*.* ◀
D>COPY a:\util\*.* ◀
```

This copies all the files from the \COMPAT and \UTIL directories to the APPS directory.

6. If you are using 3+Mail on the network, complete the following procedure. If not, skip to the next section, "Step 3: Copy DOS and Applications Programs to APPS."

Copy 3+Mail user software by inserting the *3+Mail User* diskette into drive A:. Type:

```
D>a:muinstall ←
```

This copies all the files from the diskette to the APPS directory.

Step 3: Copy DOS to APPS



CAUTION: You must copy DOS utilities and supplemental programs of version 3.1 or higher to the APPS directory. If you install an earlier version of DOS utilities and supplemental programs, the 3+ network will not operate correctly.

These copied files will be placed in a subdirectory of APPS called DOS. Having these files in a public area will allow all users to communicate with the network and use DOS commands at the same level without having to insert DOS diskettes to access the utilities and supplemental programs.



NOTE: The DOS software license requires that you purchase a licensed copy of DOS for each personal computer on your network.

1. Create a subdirectory under APPS called DOS.

```
D>MKDIR dos ◀  
D>
```

2. Make the current directory the DOS subdirectory.

```
D>CD \dos ◀  
D>
```

3. Copy all the DOS files from one of the DOS diskettes to the DOS subdirectory by inserting the DOS diskette in drive A: and typing:

```
D>COPY A: *.* D: ◀
```

Repeat this step for the other DOS diskette.

4. Make the current directory the root directory of APPS.

```
D>cd \ ◀  
D>
```

Step 4: Copy Applications to APPS

Following the conventions discussed earlier in this chapter, create a subdirectory for each application on the network. The examples below assume creation of the subdirectories under the APPS directory.



NOTE: When you want to limit access to a particular software package to a special group of users for licensing or security reasons, you can "hide" the software by installing it in a subdirectory of its administrator's home directory.



NOTE: Multiuser software written specifically for the 3Com EtherSeries products will not operate on 3+ servers. If you plan to continue to use EtherSeries servers on the network, 3+ workstations can access and use applications on those servers through EPATH, provided with the workstation drivers. See the *3+Share User's Guide* for information on using EPATH.

1. Create a subdirectory under APPS for the application.

```
D>MKDIR menu ←↵
D>
```

2. Make the current directory the new subdirectory.

```
D>CD menu ←↵
D>
```

3. Copy the application that will be shared publicly on the network. Be sure to check the documentation that comes with the application for any additional instructions or steps.
-



NOTE: It is your responsibility to comply with the software license agreements for the application you are copying.

Insert the application diskette in drive A: and type:

```
D>COPY a:*. * ←↵
D>
```

4. Use the DOS ATTRIB command to give read-only access to the application's control files.
 - a. Use the DOS PATH command to allow access to the \DOS subdirectory of APPS containing the ATTRIB command.

```
D>PATH=d:\dos ◀  
D>
```

- b. For the .EXE, .OVL, .OVR, and .COM files you have copied, use the DOS ATTRIB command to allow read-only access.

```
D>ATTRIB +r *.EXE ◀  
D>ATTRIB +r *.OVL ◀  
D>ATTRIB +r *.OVR ◀  
D>ATTRIB +r *.COM ◀  
D>
```



NOTE: See the DOS manual for information about the DOS ATTRIB (Attribute) command.

5. Make the current directory the root directory of APPS.

```
D>CD \ ◀  
D>
```

6. Repeat this process for each application that will be shared on the network.

Shared Program Directories

You can access the subdirectories you created under the APPS directory in two ways:

- ▶ Assign sharenames to each of the subdirectories
- ▶ Use the DOS PATH command

In deciding which of these options to choose, keep in mind the following factors:

- ▶ Each sharename uses a portion of the server's memory. The maximum number of sharenames allowed was specified during installation of 3+Share. (See the *3+ Installation and Configuration Guide* for more information.)
- ▶ If a software package has been designed for use on the 3+ network and requires that all users have Read-Write-Create access, you must give a sharename to its directory. Using the DOS PATH command to access the subdirectory of APPS containing the application will not provide Read-Write-Create access rights. Instead, the read-only (PUB) access rights of APPS will apply, and the software package may not function correctly.
- ▶ If you create sharenames, users are not required to link to them to access the subdirectories of APPS. Once linked to APPS, users can still use either the DOS PATH command or the DOS CD (Change Directory) command to access the subdirectories.

If you create sharenames, they ordinarily provide read-only (public) access to the directory. This forces users to maintain their data in private areas, and it protects the application code from accidentally being configured incorrectly or abused. There is one exception to this convention. Some software programs require that all users have Read-Write-Create access to the

system area. In this case, the directory should be shared with /RWC access rights.

Sometimes /RWC access is required only when changing program default values. In these cases, the directory doesn't need /RWC access. You can control the default settings by linking to APPSADMN instead of APPS. You can then use the DOS CD command to change directories and access, and to modify the application defaults.



NOTE: Some applications that were completely shareable under DOS 2.X-based networks can present problems with DOS 3.1 or 3.2. Specifically, users will not be able to open code files unless you use the DOS ATTRIB command to give those files Read-Only access. Generally, files with the extensions .EXE, .OVL, .OVR, and .COM can be declared read-only. It is extremely important that you test each shared application from at least two workstations simultaneously to assure that this aspect of the system is properly installed.

Accessing Data Files

When people require access to certain information, that information must reside in a directory that has been assigned a sharename. Typical applications for shared data directories are group word processing on a common pool of documents, and multiuser database applications.

We suggest two configuration approaches. The first method applies to data that is not generally attributed to a specific person, such as a corporate general ledger or customer file. To store such data, create a first-level directory with /RWC access. First-level directories are owned by servers, and you can substitute the abbreviation \\SYS for the server's name when linking to the directory. Further, first-level directories cannot

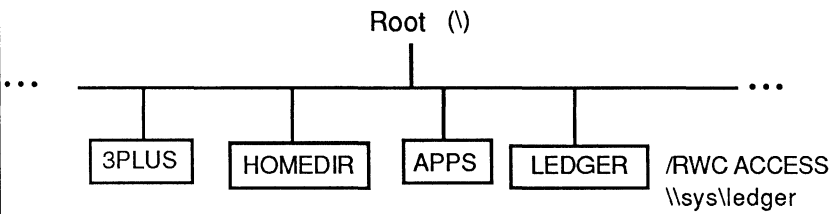
be reached by means of other "parent" directories, as would be the case if the directory was a subdirectory of APPS.

The second method applies to data that is closely associated with a specific user -- for example, managers sharing word processing documents with their secretaries. In this case, create a subdirectory within the manager's home directory with /RWC access for the data.

In either case, the directory should be linked to drive F:, following conventions recommended earlier in this chapter. Assign a password to the directory if security is a concern.

Figure 4-3 shows examples of both methods.

Method 1



Method 2

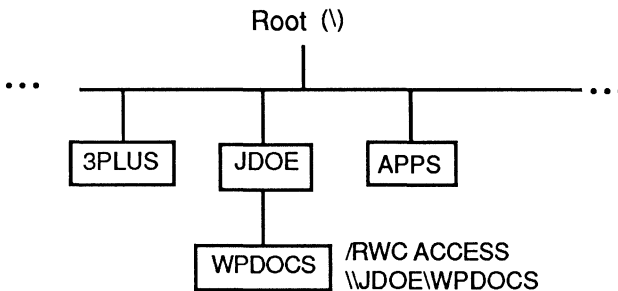


Figure 4-3. Accessing Data Files



CAUTION: DOS 3.1 and 3.2 provide a fundamental level of protection with automatic file locking. However, data can still be lost or damaged in a number of ways if applications are not designed with multiuser access in mind. If more than one user must work simultaneously on files in a common directory, we strongly recommend you use only multiuser software specifically designed for this type of use.

Use single-user software only with data in private access files. If you want to risk allowing multiple users Read-Write-Create access to a directory, be sure to test the software extensively under multiuser conditions. Otherwise, associated data may be lost or corrupted.

Step 5. Share the Configuration Directory

1. If you have not already done so, log in as the server-user.

```
A>LOGIN finance ←
```

```
Login 1.1-Copyright (c) 3Com Corporation 1986.  
All rights reserved.
```

```
Password? pass1 ←
```

```
finance:HQ:3Com logged in.
```

```
A>
```


2. Use the 3F SHARE command to assign a sharename to the \3PLUS\3CONFIG directory, specifying a password and providing private (/PRIV) access rights.

```
A>3F SHARE ? 
Sharename? config 
Path? c:\3plus\3config 
Password? change 
Access (/RWC)? /PRIV 
\\FINANCE:HQ:3COM\CONFIG shared.
```

```
A>
```

Print Service Setup

Printers must be connected to a server before you can use them on the network. The physical configuration of each printer on the network must be specified when you install the 3+Share service. If you have added a printer to the system after installing 3+Share, you must run the installation program again to update the installation parameters. For more information, see the *3+ Installation and Configuration Guide*.

After the printers have been attached and configured, you can make them accessible to the network by logging in to the network as the server-user and using the 3P SHARE command. Printers must be shared before anyone can link to and use them.

The 3P SHARE command links a printer with the port on the server you assigned that printer during installation. Table 4-2 lists the available printer ports for PC servers and 3Servers.

Table 4-2. Available Printer Ports

Type of Port	PC Server	3Server
Parallel	LPT1: LPT2:	LPT1: LPT2:
Serial	COM1: COM2:	COM1: COM2: COM3: COM4: COM5:



NOTE: If you do not remember the port you assigned the printer during installation, display its name by using the 3PSTAT command.

The name you give the printer with the 3P SHARE command is the name other users will specify when they link to the printer, and is called the **printer sharename**. A printer sharename can be up to eight characters long.

You can also create a password to control who can use the printer. Printer passwords can be up to eight characters long.

The procedure exemplified below makes a printer accessible to the network by assigning the sharename **FASTPRINT** and associating FASTPRINT with the parallel port **LPT1:**. The printer is also assigned the password **FAST**.

1. Log in as the server-user for the server whose printers you want to share.

```
A>LOGIN finance ◀
Login 1.1-Copyright (c) 3Com
Corporation 1986.
All rights reserved.
Password? pass1 ◀
Finance:HQ:3Com logged in.
A>
```

2. Link the APPS directory to drive D: and make it the default drive.



NOTE: You can eliminate this step if you prefer to use the 3+Share User #2 diskette in drive A:. If you choose to do this, continue to use A: as the default drive.

```
A>3F LINK d: apps ◀
D: linked to \\FINANCE:HQ:3COM\APPS.
A>d: ◀
D>
```

3. Use the 3P SHARE command to share the printer.

```
D>3P SHARE ? ◀
Printer sharename? fastprint ◀
Printer ID? lpt1: ◀
Password? fast ◀
\\FINANCE:HQ:3COM\FASTPRINT shared.
D>
```

4. Repeat this process for each printer attached to the server for which you are logged in. If other servers have printers attached, you must log in as the server-user for those servers and share each printer.

5. Log out as the server-user.

```
D>a: ◀  
A>LOGOUT ◀
```

6. When you have shared each printer on the network, make sure that each printer has paper, is turned on, and is on-line.

3+Mail Service Setup

When you use 3+Mail, you may find you send messages to certain people on a regular basis. To save time addressing such messages, you can create distribution lists, called **groups**. Once you create a group in the Name service, you can address your message to the group name; the service then sends it to everyone on the list. You can add and delete group members as needed.

Adding Groups

Groups are typically used as 3+Mail distribution lists so that users can send a message to many people by specifying the name of a group rather than each individual. Use the 3N ADD GROUP command for each group you want to add to the network.

The following example illustrates the use of the 3N ADD GROUP command.

```
3N>ADD GROUP ◀  
Name? Sales ◀  
Adding Group Sales . . .  
Comment? Distribution list for sales ◀  
Group Sales:HQ:3Com added.
```

Adding Members to Groups

Once you create a group, you can add members to it as needed. Members can be local or remote individuals or other groups. Any members you add must already be registered in the Name service; that is, you must have added them to the Name service with the 3N ADD USER or 3N ADD GROUP command.

To add members to groups, use the 3N ADD MEMBER command. This command prompts you with the last group you specified. To add a member to that group, press **[Return]**. If you are adding a member to a group other than the group you last specified, type the appropriate three-part group name following the prompt.

The example below adds a member to the sales group specified in the previous example.

```
3N>ADD MEMBER ◀
Member Name? Mac Murphie ◀
Group Name (Sales:HQ:3Com)? ◀
Adding member Mac Murphie:HQ:3Com to Sales:
HQ:3Com . . .
Member Mac Murphie:HQ:3Com added.
```

```
3N>
```

3+Start Service Setup

Before users on the network can use 3+Start, you must create one or more 3+Start volumes. These **volumes** are files in the directory \3PLUS\3START\STARTVOL that contain the same type of information as a 3+ workstation startup diskette and can be created only by the Admin user or a user with administrator capability.



NOTE: During the installation process, you created a diskette and labeled it **3+Start Master**. This diskette is used to create 3+Start volumes in the steps that follow. If you have not yet created this diskette, create it using the installation program. For information on installing the 3+Start service, see the *3+ Installation and Configuration Guide*.

Each 3+Start volume is 360KB in size. Disk space permitting, you can create up to 128 of these 3+Start volumes. Only one network server can have 3+Start installed.

3+Start volumes can have either public (/PUB) or private (/PRIV) access rights.

- ▶ Public 3+Start volumes can be accessed by any number of users, and you have the option of assigning passwords. Users cannot add, edit, or delete files from a public 3+Start volume. The Admin user can change information in a Public 3+Start volume. See the section "Changing Information in a 3+Start Volume" for information.
- ▶ Private 3+Start volumes can be used by one user at a time and are required to have passwords. Files can be added, edited, or deleted by any user linked to a private 3+Start volume.



CAUTION: To create a 3+Start volume, use only the 3+Start Master diskette. If you try to use any other startup diskette, it will not function correctly.

Once you have created 3+Start volumes, users with an EtherStart integrated circuit, or a PROM chip installed on the EtherLink board in their workstations, can access the network by simply turning on their machines. No diskette drives are required. A banner will appear onscreen, followed by the prompt

3+Start Volume Name?



NOTE: To comply with software license agreements, each user accessing a 3+Start volume must have a licensed copy of DOS.

To start from the default 3+Start volume, **START**, simply press **[Return]**. To start from a different 3+Start volume, type in the volume name. If the volume has a password, the screen displays the prompt

Password?

After you enter the correct password, 3+Start will link the volume to drive C: and continue loading the network drivers and executing the **AUTOEXEC.BAT** file contained in the 3+Start volume. You then can log in, link to your home directory, and function normally on the network.



NOTE: For information on changing the 3+Start banner page and the prompt, see "Changing 3+Start Defaults" later in this chapter.

Step 1: Share the Directory

Before creating the first 3+Start volume, you must use the **3F SHARE** command to assign a sharename to the directory **\3PLUS\3START\STARTVOL**. This directory was created during the 3+Start service installation and contains all the files needed by 3+Start, including the **3S.EXE** command file.

1. Log in as the server-user.

```
A>LOGIN finance <—  
Login 1.1-Copyright (c) 3Com  
Corporation 1986.  
All rights reserved.
```

```
Finance:HQ:3Com logged in.  
A>
```


2. Assign the sharename STARTDIR to the directory \3PLUS\3START\STARTVOL.

```
A>3F SHARE ?  ◀
Sharename? startdir  ◀
Path? c:\3plus\3start\startvol  ◀
Password? start  ◀
Access (/RWC)? /PUB  ◀
\\FINANCE:HQ:3COM\STARTDIR shared.
```

A>

Step 2: Create a Public 3+Start Volume

A public 3+Start volume can be accessed by all users. In this way, procedures and software are centralized in one volume. A single 3+Start volume also takes only 360KB of disk space to start all users.



NOTE: If you copy-licensed software to a 3+Start volume, make sure each user accessing the volume has a licensed copy of the software, in compliance with copyright laws.

To easily access privately owned applications such as 3+Menus, 3+Mail, or a word processor directly from the public 3+Start volume, a user should copy batch files that launch those applications into his own home directory.

1. Log in as Admin.

```
A>LOGIN admin ◀  
Login 1.1-Copyright (c) 3Com  
Corporation 1986.  
All rights reserved.
```

```
Admin:HQ:3Com logged in.  
A>
```

2. Link the 3+Start directory, STARTDIR, to drive D: and make it the default drive.

```
A>3F LINK \\sys\startdir d: ◀  
D: linked to \\FINANCE:HQ:3COM\STARTDIR.
```

```
A>d: ◀  
D>
```

3. Place in drive A: the diskette that you created during the installation process and labeled **3+Start Master**.
4. If you want to customize, add, or delete files in the 3+Start volume, make the changes to the 3+Start Master diskette. All files on this diskette will be copied to the public 3+Start volume created in the following steps.



NOTE: If you plan to continue using EtherSeries servers on the network, workstations using 3+Start can access them and use applications through the driver EPATH. To use this driver, copy the file \3DRIVERS\EPATH.SYS from the *Installation #1 (Drivers)* diskette to the 3+Start Master diskette. Then edit the CONFIG.SYS file, replacing the line **DEVICE = STRDRV.SYS** with **DEVICE = EPATH.SYS**.



NOTE: To modify the 3+Start volume after its creation, see the section "Changing Information in a 3+Start Volume" later in this chapter.

5. Use the 3S CREATE command to create a 3+Start volume.

```
D>3S CREATE start /desc="Public  
3+Start volume." ◀
```

WARNING: The DOS software license requires that you have a version of DOS for each personal computer on your network.

```
Continue? (Y/N): y ◀
```

```
Copying 720 sectors from A: to start ..  
.....  
.....
```

```
D>
```



NOTE: A total of 720 dots will appear on the screen as the 3+Start volume is created. Each dot represents a sector being copied from the 3+Start Master diskette to the 3+Start volume.

The result of this 3S CREATE command will be a public (/PUB) 3+Start volume called **start** with a description of **Public 3+Start volume** and no password.

Step 3: Create Private 3+Start Volumes

You can create additional 3+Start volumes with private access rights for individual users. Some users may prefer having their own 3+Start volumes to customize for individual preferences.

You can also create additional public 3+Start volumes with customized batch files for groups of users.

Remember that each private 3+Start volume is required to have a password. Public volumes can be assigned passwords, as an option, to control which users have access to them.

1. If you have not already done so, log in as Admin; link the 3+Start directory, STARTDIR, to drive D: and make it the default drive.

```
A>LOGIN admin ◀
Login 1.1-Copyright (c) 3Com
Corporation 1986.
All rights reserved.
```

```
Admin:HQ:3Com logged in.
```

```
A>3F LINK \\sys\startdir d: ◀
D: linked to \\FINANCE:HQ:3COM\STARTDIR.
```

```
A>d: ◀
D>
```

2. Place the 3+Start Master diskette in drive A:.

3. Use the **3S CREATE ?** command to create a new 3+Start volume.

```
D>3S CREATE ? 
Volume Name? myvol 
Password? secret 
Access? priv 
From? a: 
Description? My private 3+Start volume. 
Warning:      The DOS software license
               requires that you have a
               version of DOS for each
               personal computer on your
               network.
Continue? (Y/N): y 

Copying 720 sectors from A: to myvol ...
.....
.....
D>
```

4. Repeat these steps to create as many 3+Start volumes as you want. If you wish to give a volume public access, simply specify **pub** at the **Access?** prompt.



NOTE: To change an attribute of a 3+Start volume, use the **3S MOD** command. To delete a 3+Start volume, use the **3S DEL** command. To list information about 3+Start volumes, use the **3S DIR** command. Commands are detailed in Chapter 6.

Changing 3+Start Defaults

When a user with an EtherStart chip installed starts his workstation, a banner appears followed by a prompt for the 3+Start volume name. Both the banner and the prompt can be changed. You may change one or both of these items if you:

- ▶ Want to customize the banner with your own message
- ▶ Do not want any banner page to appear
- ▶ Have users on the network accessing EtherSeries servers as well as users accessing 3+ servers
- ▶ Want all users to use the same 3+Start volume

Editing the Banner Page

The banner page may be changed to display your own message or completely disabled.

The file \3PLUS\3START\BANNER.ASC controls the display. This is an ASCII file and therefore can be edited with the 3Com editor MED or most word processing programs.

To disable the banner page, simply rename the \3PLUS\3START\BANNER.ASC file.

Selecting a 3+Start Prompt

Prompts are controlled by the file \3PLUS\3START\PRMPT.ASC. This file is also in ASCII format and can be edited with the 3Com editor MED or most word processing programs. It consists of the following two lines:

```
ques1=off  
ques2=on
```

These lines control the following prompts:

ques1= When this value is set to **on**, the user will see the prompt

Use 2.4 EtherStart? (Y/N)

If your network is configured with one or more EtherSeries servers in addition to 3+ servers, users wishing to start from an EtherSeries server would respond to this prompt by typing **Y** and pressing **[Return]** .

The default value is ques1=off.

ques2= When this value is turned **on**, the user will see the prompt

3+Start Volume Name?

To start from a 3+Start volume, the user would enter the volume name or press **[Return]** to start from the default volume.

The default value is ques2=on.

If both ques1 and ques2 display **off**, the user will see the banner page (if one is enabled) and the workstation will be started using the public 3+Start volume created during Step 2 (Create a Public 3+Start Volume), earlier in this chapter.

This method provides the most economical 3+Start configuration. All users can start their workstations using a single, 360KB 3+Start volume; and the administrator can easily add or modify files and applications within the volume.

Changing Information in 3+Start Volumes

To change information within a private 3+Start volume, simply link to the volume by one of the following methods:

- ▶ After starting your workstation, specify the private volume name at the **3+Start Volume Name?** prompt.
- ▶ Use the 3S LINK command.

Once the private 3+Start volume is linked to drive C:, you can use standard DOS commands to add, edit, or delete files within the volume.

Information contained in public 3+Start volumes cannot be changed directly. Instead, follow these steps:

1. Log in as Admin.

```
A>LOGIN admin ◀
```

Login 1.1-Copyright (c) 3Com Corporation 1986.
All rights reserved.

```
Admin:HQ:3Com logged in.  
A>
```

2. Link the 3+Start directory, STARTDIR, to drive D: and make it the default drive.

```
A>3F LINK \\sys\startdir d: ◀
```

D: linked to \\FINANCE:HQ:3COM\STARTDIR.

```
A>d: ◀
```

D>

3. Use the 3S MOD command to modify the public volume, giving it private access rights and a password.

```
D>3S MOD ? ◀  
Volume Name? start ◀  
Password? pass ◀  
Access? PRIV ◀  
Description? ◀
```

D>

4. Use the 3S LINK command to link the modified volume to C:.

```
D>3S LINK start ◀
```

D>

5. Using standard DOS commands, make the desired changes to the 3+Start volume which is now linked to drive C:.
6. Use the 3S UNLINK command to unlink the 3+Start volume from drive C:.

```
D>3S UNLINK ◀  
D>
```

7. Use the 3S MOD command to modify the volume, giving it public access and no password.

```
D>3S MOD ?  
Volume Name? start ◀  
Password? ◀  
Access? pub ◀  
Description? ◀
```

D>

■ 3+ Remote Service Setup

1. Remote users must have an entry in the Name service exactly as if they were local users. Use the 3N ADD USER command to add an entry in the Name service for each remote user.



NOTE: A single entry in the Name service is sufficient for an individual user to use the network both locally and remotely.

2. You must assign a unique network number to each remote user. This allows the network services to maintain a single logical connection with the remote user, even if several, separate telephone calls are required (due to inactivity timeouts, for example) between the user logging in and logging out.



NOTE: This remote user's network number has no relation to the network number you assigned to the Name service.

Using the remote user's network number, the network services can keep track of the remote user even if his incoming calls go to separate ports or different servers.

The network number range is 0004F000 to 0004FFFF, which allows up to 4,096 different network numbers. Each remote user who can call your network must have a network number that is unique within your network or the group of networks that he can access. The network number must be an eight-character sequence (leading zeros can be omitted) composed of the digits 0 through 9 and the letters A through F.



CAUTION: Make sure that each remote user is assigned a unique network number. Otherwise, if two remote users access the network using the same network number, the results are unpredictable.

The remote user must enter his assigned network number in the PROFILE.SYS file on the *3+Remote Workstation Startup* diskette created during the installation process.

Figure 4-4 can be filled in and given to each remote user as an aid in creating his PROFILE.SYS file. Assign network numbers and complete a sheet for each user. Keep a copy for your own file for future reference.

Information for creating your individual PROFILE.SYS file.

(Please see the *3+Remote User's Guide* for a complete list of items specified in PROFILE.SYS.)

USER NAME: _____

LINE1= _____

(Phone number to access the network/maximum 49 characters)

NETWORK= _____

(Unique number assigned to this remote user)

Figure 4-4. Template to Assist Remote Users

3+Route Service Setup



NOTE: 3+Route includes the functions of 3+Remote. Follow the instructions for setting up the 3+Remote service, earlier in this chapter, in addition to the steps below.

Before you can use 3+Route to communicate with other networks, you must have entries in your network's Name service for the other networks. For each network, your Name service must have at least one entry for a domain on that network; you can communicate only with users and servers in the domains entered in your Name service.

For Servers on Other Networks

To use File service (3F) and Print service (3P) commands to access files and printers on another network's server, add that server to your network's Name service. The 3N ADD SERVER command adds the server to your network's Name service.

1. Insert the *3+Share User #2* diskette in drive A:.
2. Add the server to the Name service with the 3N ADD SERVER command, for example:

```
A>3N ADD SERVER Sales:HQ:OtherCorp ◀
Adding Server Sales:HQ:OtherCorp ...
Comment? A server on another network ◀
Net Number (00040006)? 0004010A ◀
Ethernet Address? 02608C00809E
3ShareInstalled? y ◀
3MailInstalled? ◀
3RouteInstalled? y ◀
Server Server1:HQ:OtherCorp added.
```

A>

3. Repeat Step 2 to add each or any server on that other network.

For Users on Other Networks

To communicate with users on other networks using 3+Mail only, you do not need to enter the users in your network's Name service. However, if you intend to use File service commands to access certain users' files, you must enter those users in your network's Name service. Each case is discussed below.

Mail Users

The 3+Mail service does not require that the Name service have an entry for each user of another network who is named as a mail recipient. It only requires the domain and organization of any such user be entered in the Name service. The domain and organization allow the Name service, and thus 3+Mail, to identify the user's network.

Given the user's network, 3+Mail sends the mail to a 3+Mail server on that network and then lets that server locate the user. If the other network has no 3+Mail server or the user cannot be located, the service informs the sender that 3+Mail is unable to deliver to that user.

You can include users from other networks in distribution lists (Name service groups) without adding those individual users to the Name service, provided you have added those users' domains and organizations to the Name service.

File Service Users

To use File service commands to access the files of a user on another network, you must add the names of that user and his File service server to your Name service. You must add the server before you add the user. For information on adding servers, see "For Servers on Other Networks" earlier in this chapter. Then use the 3N ADD USER command to add the user to the Name service.

1. Insert the *3+Share User #2* diskette in drive A:.

2. Add the user to the Name service with the 3N ADD USER command, for example:

```
A>3N ADD USER John Doe:HQ:OtherCorp ◀
Adding User John Doe:HQ:OtherCorp ..
Comment? Person at OtherCorp's HQ ◀
CapabilityClass (U)? ◀
3MailServer? Sales:HQ:Othercorp ◀
3ShareServer? (Sales:HQ:OtherCorp) ◀
HomeDir? jdoe ◀
FileServer Drive? c: ◀
```

3. At this point, the service will establish a communication link with the other network and check to see if the user exists in your Name service.

If the link is completed correctly, you will see the message **User already exists** followed by a prompt asking if the user should be added to your Name service anyway. Respond **Y** (yes) to the prompt and continue.

If the communication link fails, you will see the message **Failed to add user . . .** followed by a prompt asking if the user should be added to your Name service anyway. If you know the other user exists on the remote network, respond **Y** (yes) to the prompt and continue, or respond **N** (no) and attempt this again when the communication link is functioning.

Finally, you will see the message **User John Doe:HQ:OtherCorp added**.

4. Repeat Step 2 for each user.

After you have added the entries to the Name service, you can use 3+Route to communicate with other networks.

3+Backup Service Setup

When you use a 3Server with a tape backup unit, you will be able to back up all 3+ servers on your network that have 3+ File and Print services installed. The *3Server Tape Backup Guide* provides detailed instructions on installing the tape backup unit and using the 3+Backup (3B) commands.

To access the 3B commands that allow you to perform backups, it is a good idea to share the \3PLUS\3BACKUP directory. This directory was created when you installed the 3+Backup service and contains the 3B.EXE command file. If you do not share this directory, you must issue all 3+Backup commands from the 3+Backup Server diskette.

This directory also contains the backup schedule file and the log file created by 3+Backup.

1. Log in as the server-user.

```
A>LOGIN finance ◀
Login 1.1-Copyright (c) 3Com
Corporation 1986.
All rights reserved.
```

```
Finance:HQ:3Com logged in.
A>
```

2. Assign a sharename to the directory \3PLUS\3BACKUP.

```
A>3F SHARE backup=c:\3plus\3backup
/PUB /PASS=backup ◀
\\FINANCE:HQ:3COM\BACKUP shared.
```

```
A>
```

To perform a 3+Backup operation, log in as Admin or a user with administrator capabilities, link to the sharename **BACKUP**, and issue the appropriate 3B commands.

■ Name Service Entries Listing

When you have set up all the services on the network, list the Name service entries and check that you have added each one correctly. You can list the entries by entering a 3N DIR command for each item (domain, organization, users, and aliases) and then redirecting the listing to a printer.

1. Log in to the network as a user.

```
A>LOGIN james jacobs <—  
Login 1.1-Copyright (c) 3Com  
Corporation 1986. All rights reserved.
```

User James Jacobs:HQ:3Com logged in.

2. Insert the 3+Share User #2 diskette in drive A:.
3. Link to the printer on which you want the list printed.

```
A>3P LINK ? <—  
Printer Id (PRN:)? lpt1: <—  
Printer Share Name? fastprint <—  
Password? <—  
LPT1: linked to \\Finance:HQ:3Com\Fastprint.
```

4. Use the 3N DIR command to direct a listing of the servers on your network to the printer.

```
A>3N DIR SERVER >LPT1: <—
```



NOTE: This command must be entered at a DOS prompt. It will not work from a service prompt. If you are working within a service, you must first exit that service before directing a listing to a print file.

It is recommended that you file these printouts for future reference.

■ Network Services Testing

After you have set up the services, test them to be sure everything works before users log in to the network.

To test the services, log in as a regular user and use the following steps, making sure that you can access the APPS directory.

1. Log in to the network as a user.

```
A>LOGIN james jacobs ←  
Login 1.1-Copyright (c) 3Com  
Corporation 1986.  
All rights reserved.
```

User james jacobs:HQ:3Com logged in.

2. Link to the user's home directory.

```
A> 3F LINK ? 
Drive Id? e: 
Sharename? 
Password? 
E: linked to \\John Doe:HQ:3Com.
A>
```

3. Link to the APPS directory.

```
A>3F LINK? 
Drive Id? d: 
Sharename? apps 
Password? 
D: linked to \\Finance:HQ:3Com\APPS.
A>
```

4. Make the default drive D:.

```
A>d: 
D>
```

5. Link to a printer on the network.

```
D>3P LINK ? 
Printer Id (PRN:)? lpt1: 
Printer Sharename? fastprint 
Password? fast 
LPT1: linked to \\Finance:HQ:3Com\Fastprint.
D>
```

6. Use the DOS COPY command to enter text into a file. You will access the DOS command from the drive identifier to which you linked the APPS directory (D: in the example above). The text you type is sent to a file on the drive identifier to which you linked your home directory (E: in the example above).

D>COPY CON: e:filea 

7. Type some text, pressing [Return] after each line.

Type a line and press 

Type your next line and press 

.
.
.

Type your last line and press 

8. Press the [Ctrl] + [Z] keys and then press [Return] to stop copying from your screen to the file.
9. Use the DOS COPY command to send the file to the printer to which you are linked.

D>COPY e:filea lpt1: 

D>

The test is successful if your text file prints on the printer to which you are linked. You can then delete FileA from the home directory. If your file does not print, see the next section, "Solving Problems."

10. Unlink from the printer.

```
D>3P UNLINK lpt1: ◀  
LPT1: unlinked from \\finance:HQ:3Com\Fastprint.  
D>
```

11. Make A: the default drive.

```
D>a: ◀  
A>
```

12. Unlink from APPS and the home directory.

```
A>3F UNLINK d: ◀  
D: unlinked.  
A>
```

```
A>3F UNLINK e: ◀  
E: unlinked.  
A>
```

■ Problem Solving

If the tests described in the preceding section fail, try the following:

1. Make sure you have entered all commands correctly, with no typographical errors. If you find errors, repeat the test, entering the commands correctly.
2. Restart the server and select the menu item **Exit to DOS**. Check that the personal computer and any attached peripherals operate correctly with just DOS.

3. Check to see that the network is cabled and terminated properly. Refer for help to the *3Com Network Guide* or the *Token Plus Administrator's Guide*.
4. To see that the components on your network are communicating with one another, run the diagnostic program that comes with each network controller board. For complete information on using these diagnostic programs, see the *3Com Network Guide* or the *Token Plus Administrator's Guide*.
5. Try testing the service again.

Chapter 5: Managing the Network

After you have installed your 3+ network, you need to perform various management functions to keep it running smoothly. This chapter tells you how to manage your network after you have installed the software and set up the services.

The management functions that are covered in this chapter are:

- ▶ Organizing network administration
- ▶ Managing storage space
- ▶ Moving users
- ▶ Backing up and restoring files



- ▶ Managing printers
 - o Changing a printer sharename
 - o Adding a printer
 - o Deleting a printer
 - o Reordering a print queue
- ▶ Managing the 3+Remote service
- ▶ Managing the 3+Route service
- ▶ Deinstalling and moving services
- ▶ Shutting down the services

For a detailed description of all 3+Share administrator and server-user commands, refer to Chapter 6.

Organizing Network Administration

Your task in organizing network administration is to determine who is to manage what. There are three general approaches:

- ▶ No formal management
- ▶ Centralized management
- ▶ Distributed management

No Formal Management

Very small networks may not need any type of formal management -- the users can manage themselves. When the entire network is in a single room and consists of fewer than 20 workstations, self-management may work well. Larger networks, however, often require some structured form of management in order to operate smoothly.

Centralized Network Management

Centralized management means a single individual or group is responsible for managing the entire network. All network administrator functions are requested and coordinated through this single individual or group. This form of management provides the most control over the network.

Distributed Network Management

In a network with multiple servers, distributed management may be appropriate. Each department has its own network administrator who is responsible for managing the servers and services within that department. Some central coordination is required in the management of the 3+Name service since there is only one for the entire network.

Most networks combine distributed and centralized management to some degree. Some administrative functions are centrally controlled, some are distributed. The mix appropriate to your organization is partially a function of how you have distributed the servers and services and partially a function of your organization's management style.

Managing Storage Space

As network administrator, you are responsible for managing the disk space for each file server on the network. To manage disk space, you need to:

- ▶ Monitor how much space is available for each file server
- ▶ Provide more space when it is needed

Available space is the amount of storage space available on the server's disk or disks for network users to access. Too little available space can slow down the network and affect users' productivity.

As a general guideline, at least 10 percent of a server's disk space should be available. This may vary, depending on the kind of application you are running. For example, with an application that uses a large amount of temporary file space, you will need more available space on the disk. Servers that are used for shared printers also require space for storing files waiting to be printed.



Checking Disk Space

You should monitor the amount of available disk space at least once a week to be sure that there is an adequate amount for your network. Use the 3F STATUS command to determine the amount of available disk space on a server. This command lists the shared disks for a server and the available space. For information about the 3F STATUS command, see the *3+Share User's Guide*.

Creating Disk Space

When the amount of available disk space on a file server becomes too low for efficient use of the network resources, you need to provide more available space. There are five ways to do this:

- ▶ Have users delete unnecessary files and/or directories.
- ▶ Add an expansion disk.
- ▶ Store directories on diskettes or tape, and then delete them from the server.
- ▶ Redistribute users and programs to file servers that have more available space.

If you add hard disks to a server or servers on your network, you must:

1. Shut down the services on the affected server. Be sure to follow the instructions in "Shutting Down the Services" later in this chapter.
2. Install the expansion disk, following the manufacturer's instructions.
3. Restart the server in DOS mode.

4. Run the 3INSTALL program to modify the software for your new configuration. For information on running the 3INSTALL PROGRAM, refer to the *3+Installation and Configuration Guide*.
5. Restart the server and resume network operations. To utilize the new available space, follow the instructions in the section "Moving Users" in this chapter.

Storing directories and files on tape or diskette is a good solution provided users have files that they do not need immediately. To store directories and files, use either 3Server 3+Backup (if you have a 3Server and have purchased the software), the 3COPY utility, or the DOS COPY or BACKUP command. For information on the COPY command, see your DOS manual. For information on using DOS BACKUP, see "Backing Up and Restoring Files" later in this chapter. For information on using 3+Backup, see the *3Server 3+Backup Guide*. Information on the 3COPY utility is in Appendix E of this guide.

Moving Users

From time to time, it may be necessary to move a user's home directory to a different location on the network. This may occur if your file server runs out of space or has less available space available than you desire. Your options for creating space are discussed in this chapter under "Managing Storage Space."

This section describes two ways to move users:

- ▶ Between file servers
- ▶ Between drives on a server



You will need to move users in the following instances:

- ▶ An expansion disk is added to the system. For this disk space to be used, you may need to move some user home directories to it.
- ▶ Users are deleted from the system. If this occurs, you may want to move users from one drive to another so that available disk space is more evenly distributed.
- ▶ Too many users have home directories on one drive. In this case, you may want to move users from one server to another or from one drive to another.

The procedure for moving users between servers or between drives on a single server is outlined below.



NOTE: When you have completed these steps, the users' home directories will have new names.

1. Log in as the server-user for the server to which you are moving the user.

```
A>LOGIN finance <—|
```

```
Login 1.1-Copyright (c) 3Com  
Corporation 1986. All rights reserved.  
Finance:HQ:3Com logged in.
```

2. Create a directory with the 3F SHARE command. Give the directory a name different from the user's current home directory, and with Read-Write-Create access rights.

```
A>3F SHARE ? 
Sharename? johndir 
Path? c:\johndir 
Password? 
Access (/RWC)? 
\\Finance:HQ:3Com\johndir shared.
```

3. Log in as the user. If the user has a password that you do not know, log in as the administrator and use the 3N MODIFY command to delete the password. Once you have moved him, the user can restore his password.

```
A>LOGIN john doe 
Login 1.1-Copyright (c) 3Com
Corporation 1986. All rights reserved.
```

John Doe:HQ:3Com logged in.

4. Link to the user's home directory.

```
A>3F LINK ? 
Drive Id? e: 1 
Sharename? 1 
Password? 1 
E: linked to \\John Doe:HQ:3Com.
```

5. Link to the directory on the second server.

```
A>3F LINK ? 
Drive Id? f: 
Sharename? \\finance\johndir 
Password? 
F: linked to \\Finance:HQ:3Com\johndir.
```

6. Link to APPS and use the 3COPY utility to copy all directories and subdirectories from the user's old home directory to the directory you created on the second server. See Appendix E for information about 3COPY.

```
A>3F LINK ? 
Drive Id? d: 
Sharename? \\finance\apps 
Password? 
D: linked to \\Finance:HQ:3Com\APPS.
```

```
A>d:3COPY e:*. * f: /s 
```

7. Use the 3F DIR command to see if the user has any shared directories. If so, use the 3F UNSHARE command to delete their sharenames.

```
A>3F DIR 
\\JOHN DOE:HQ:3COM C:\JDDOE /HOME 1 users
INBOX C:\JDDOE\SUBDIR1 /PRIV 0 users
```

```
A>3F UNSHARE 
Sharename? inbox 
\\JOHN DOE:HQ:3COM\INBOX unshared
```

```
A>
```

8. Use the DOS DELETE command to delete all the files from the user's home directory and its subdirectories (if any). When all the files have been deleted, use the DOS RMDIR (Remove Directory) command to delete any subdirectories under the home directory.

```
A>DELETE e: *.* ←  
A>DELETE e:\subdir\*.*  
A>RMDIR e:\subdir ←
```

For information about using these commands, see your DOS manual.

9. Log in as the server-user and use the 3F UNSHARE command to delete the sharename assigned to the new directory.

```
A>LOGIN finance ←  
Login 1.1-Copyright (c) 3Com  
Corporation 1986.  
All rights reserved.  
Finance:HQ:3Com logged in.
```

```
A>3F UNSHARE johndir ←  
\\Finance:HQ:3Com\johndir unshared.
```

10. Log in as the initial user or any user with Admin capabilities.

```
A>LOGIN admin ←  
Login 1.1-Copyright (c) 3Com  
Corporation 1986. All rights reserved.
```

```
Password ? pass ←  
Admin:HQ:3Com logged in.
```



11. Link to the APPS directory and make it the default drive.

```
A>3F LINK d: \\sys\apps ↵
D: linked to \\FINANCE:HQ:3COM\APPS.
```

```
A>d: ↵
D>
```

12. Use the 3N MODIFY command to delete the user's current file server. Press [Esc] when prompted for the 3ShareServer. Deleting the user's file server also deletes the user's home directory if it is empty.

```
D>3N MODIFY ↵
Name? john doe ↵
Looking for John Doe:HQ:3Com ...
Comment (New user 5-12-84)? ↵
Password? ↵
CapabilityClass (U)? ↵
3MailServer? (Corporate:HQ:3Com)? ↵
3ShareServer (Corporate:HQ:3Com)? [ESC] ↵
User John Doe:HQ:3Com modified.
A>
```

13. Use the 3N MODIFY command a second time and, when prompted, enter the name of the user's new file server, the new home directory, and file server drive.

```
D>3N MODIFY ◀
Name? john doe ◀
Looking for John Doe:HQ:3Com ...
Comment (New user 5-12-86)? ◀
Password? ◀
CapabilityClass (U)? ◀
3MailServer? (Corporate:HQ:3Com) ◀
3ShareServer? finance ◀
HomeDir? johndir ◀
File Server Drive? c: ◀
User John Doe:HQ:3Com modified.
Adding John Doe:HQ:3Com to Share Server
finance:HQ:3Com.
```

Once you have assigned the new file server and home directory, have the user reshare any directories that were shared in the old home directory.

Backing Up and Restoring Files

Backing up files is the process of making copies of files for safe keeping. Backing up protects your files against loss due to software, equipment or power failure, or user error. Restoring files is the process of replacing damaged or lost files, using their backup copies. The best system for doing backups is using a 3Server with a tape backup unit. It can be used to automatically backup the 3Server itself or any other 3+ server on the network.

See the *3Server Tape Backup Guide* for information on using a 3Server's tape backup unit. The following section discusses backing up in general and then gives you instructions on using the DOS BACKUP and RESTORE commands with files stored on the server's hard disk.

Guidelines for Backup

If a hard disk fails, you cannot recover the files stored on the disk. If the files were not backed up, they are lost. If the files were backed up, only the changes made to the files since the last backup are lost. Backing up files is as valuable as the information in the files and the cost to reconstruct lost files. Consequently, most networks will want to have a plan for backing up files.

Every plan for backup should specify:

- ▶ Who is responsible for performing backup
- ▶ Which files are to be backed up
- ▶ How often the files should be backed up
- ▶ How long backups should be retained
- ▶ How to handle the restoration process

Each is discussed briefly below.

Who is responsible for performing backup will depend on how your company organizes network administration responsibilities. See "Organizing Network Administration" at the beginning of this chapter. In most networks, the network administrator is responsible for performing backup. If this is not possible, individual users can be responsible for backing up their own files.

Every file should be backed up at least once. After that, a file needs to be backed up again only if it changes. For example, a program file that does not change needs to be backed up only once, when it is first installed. A data file, on the other hand, may change several times a day and thus require frequent backup.

A common procedure is to perform an incremental backup frequently (every day or two, for example) and to perform a full backup less frequently, perhaps every week or two. An incremental backup copies only those files that have changed since the last backup. A full backup copies every file on the server's disk.

Hard disks are backed up on cartridge tape or diskettes. The instructions that follow tell you how to use the DOS BACKUP command to back up your files on diskettes. If you are using a 3Server with a Tape Backup Unit, see the *3Server Tape Backup Guide* for instructions on backing up on tape. If you are using a tape subsystem from another vendor, consult that subsystem's manual for instructions.

As a general rule, retain one full set of backups at all times. For example, if your backup schedule calls for a full backup once a week and an incremental backup every day, you should always have one full backup and six incremental backups on file. Having two complete sets of diskettes or tapes allows you to store two weeks of the backup cycle.

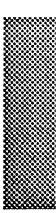


Figure 5-1 illustrates how this can be done. The first week, you use the set of diskettes marked "odd." Do a full backup on Monday, followed by incremental backups on Tuesday through Sunday. The second week, you use another set of diskettes, marked "even," to complete the same backup schedule. During the third week, you can again use the "odd" diskettes, followed the fourth week by the "even" set, and so on. In this manner, you are assured that one complete set of backups is on hand at all times.

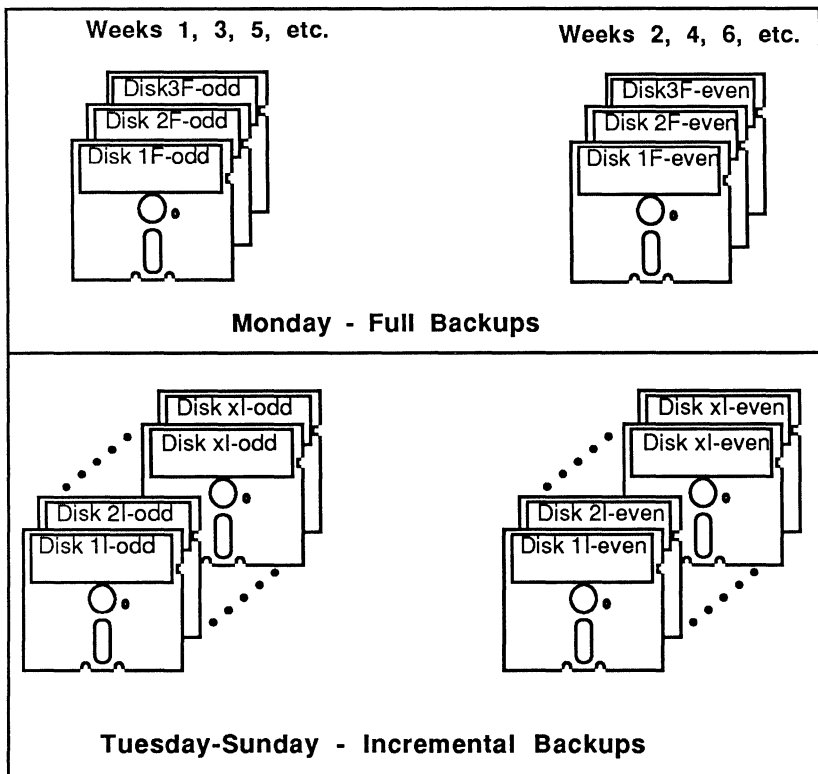


Figure 5-1. Backup Retention Organization

Should data be lost, you can restore one or all files from the latest backup. A user can easily restore one or more of his own files without assistance. However, if all files must be restored, you should perform the operation as part of your administrative duties. Instructions for restoring backups appear later in this chapter.

Using DOS BACKUP

There are two main approaches to using the DOS BACKUP command to back up files on a server's hard disk. You can perform the backup while the server is providing service to the network, or you can shut down the server and perform the backup using DOS alone.

If you perform backups while the server is running:

- ▶ Users can continue using the services
- ▶ You must have at least public (read-only) access rights to every directory you want to back up
- ▶ To perform an incremental backup, you must have Read and Write access rights to every directory you want to backup
- ▶ You cannot back up files that have Write or Create access rights and are in use by another user

If you perform backups after shutting down the server:

- ▶ Users cannot continue using the services
- ▶ If the server is the 3+Name service server, no one can use the network
- ▶ You can back up any directory on the server, regardless of whether or not it is shared

The following examples show the use of the BACKUP command on a PC file server running DOS only.

Example 1: Full Backup

To back up all the files on a hard disk, you must shut down the server and use DOS alone. This is because you cannot link to the root directory of a shared disk. (See "Shutting Down the Services" later in this chapter.) Once in DOS, use the following command to back up the contents of hard disk C: to diskette in drive A:.

```
A>BACKUP c:\ a: /s <—
```

This command copies the contents of drive C:'s root directory to a DOS-formatted diskette in drive A:. The /S option specifies that all subdirectories of C:'s root directory will also be copied to the diskette in A:. If you omit the /S option, only the files in the specified directory are copied to the diskettes.

Example 2: Full Backup by Users

If you are a general user, named John Doe, and you want to back up every file in your home directory and its subdirectories, use 3+Share and the following series of commands.

1. Log in to the network.

```
A>LOGIN john doe <—  
Login 1.1-Copyright (c) 3Com  
Corporation 1986. All rights reserved.
```

John Doe:HQ:3Com logged in.

2. Link to your home directory.

```
A>3F LINK e: <—  
E: linked to \\John Doe:HQ:3Com.
```

3. Type the DOS BACKUP command using the /S option.

```
A>BACKUP e:\ a: /s <—
```



NOTE: If you do not have the file BACKUP.COM on your workstation boot disk, either copy it from a DOS disk to your boot disk or insert a DOS disk in drive A: before issuing this command.

Example 3: Incremental Backups

If you want to back up all files that have changed since the last backup, you must shut down the server and use DOS alone. You can perform the incremental backup of a hard disk C: with the following BACKUP command.

```
C>BACKUP c:\ a: /s /m ◀
```

The /M option specifies that only files modified since the last backup are to be copied.

Example 4: Incremental Backups by Users

If you are the user John Doe from Example 2, you can perform an incremental backup of your own files with the following series of commands.

1. Link to your home directory.

```
A>3F LINK e: ◀
```

```
E: linked to \\John Doe:HQ:3Com.
```

2. Type the DOS BACKUP command using the /S and /M options.

```
A>BACKUP e:\ a: /s /m ◀
```



NOTE: If you use the /M option with 3+Share as shown above, the sharename through which you link must grant both Read and Write access rights. Each user automatically has Read and Write access rights to files under his home directory. The /M option is the only option that requires Write as well as Read access rights. All other forms of the BACKUP command require only Read access. For a complete description of the BACKUP command, see your DOS manual.

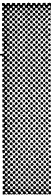
Using DOS RESTORE

If the server's hard disk fails, you need to restore that server's files from the backup copies to another hard disk. The following instructions tell you how to restore files from both full and incremental backups.



NOTE: Information saved using the DOS BACKUP command cannot be accessed directly because DOS stores them in a special format. You must use the DOS RESTORE command to copy the files back to the hard disk in order for them to be accessible.

To restore files that were previously backed up with the BACKUP command, use the DOS RESTORE command. For a complete description of the RESTORE command, see your DOS manual. As with the BACKUP command, you can use the RESTORE command with DOS alone or with 3+Share. The same advantages and disadvantages apply to each approach as discussed with the BACKUP command.





NOTE: If the backup requires more than one disk, the DOS RESTORE program will prompt you to insert the next disk when appropriate.

Example 1: Restoring from Full Backups

The simplest case is to restore from a full backup. The following example shows how to restore a hard disk, C:, from a full backup in drive A:. Here again, you must use DOS alone in order to access drive C:'s root directory.

```
A>RESTORE a: c:\ /s ◀
```

Again, the /S option specifies that files from all subdirectories of the named directory are to be restored also.

Example 2: Restoring by User

Consider the user John Doe from above. The following commands will restore the contents of his home directory and its subdirectories from a full backup in drive A:.

1. Log in to the network.

```
A>LOGIN john doe ◀  
Login 1.1-Copyright (c) 3Com  
Corporation 1986. All rights reserved.
```

```
John Doe:HQ:3Com logged in.
```

2. Link to your home directory.

```
A>3F LINK e: ◀  
E: linked to \\John Doe:HQ:3Com.
```

3. Type the DOS RESTORE command using the /S option.

```
A>RESTORE a: e:\ /s ←
```

Example 3: Restoring from Incremental Backups

Restoring from incremental backups requires more steps than restoring from a full backup. For example, suppose your network has been following a backup schedule of performing a full backup on Friday and incremental backups on Monday through Thursday. To recover from a hard disk failure that occurred before the backup on Wednesday, you would follow these steps.

1. Restore last Friday's full backup. Insert the first backup diskette in drive A: and a DOS diskette in drive B:. Enter the following RESTORE command.

```
B>RESTORE a: c:\ /s ←
```

2. Restore last Monday's incremental backup. Insert Monday's first backup diskette in drive A: and then enter the following RESTORE command.

```
B>RESTORE a: c:\ /s ←
```

3. Finally, restore last Tuesday's incremental backup. Insert Tuesday's first backup diskette in A: and then enter the following RESTORE command.

```
B>RESTORE a: c:\ /s ←
```

The hard disk is now completely restored.

Example 4: User-Restored Incremental Backups

If you are a regular user restoring the contents of your home directory from a set of incremental backups, you can follow the same steps as in Example 3 except that you must first link a drive identifier to your home directory; then, substitute that drive identifier for C: in the above steps.

1. Link to your home directory.

```
A>3F LINK e: ◀
```

2. Insert last Friday's first backup diskette in drive A: and a DOS diskette in drive B:. Enter the following RESTORE command.

```
B>RESTORE a: e: \ / s ◀
```

3. Insert last Monday's first backup diskette in drive A: and enter the following RESTORE command.

```
B>RESTORE a: e: \ / s ◀
```

4. Insert last Tuesday's first backup diskette in A: and enter the following RESTORE command.

```
B>RESTORE a: e: \ / s ◀
```

The contents of the home directory are now completely restored.

Backing Up the 3+Name Service

In the event of a failure of the 3+Name server, the network will be essentially unavailable.



NOTE: Be sure to periodically back up the files contained in the directory \3PLUS\3NAME, using one of the backup techniques discussed earlier. If the 3+Name server fails, you can keep your network operational by installing the 3+Name software on a new server and restoring the latest backup of these files to the new server.

If you should need to bring a new 3+Name server into operation, make sure that the original 3+Name server is no longer running. After bringing the new server into operation on the network, restart each workstation. This is required because the 3+Name server's address is stored in the workstation's memory at startup. If the user attempts to access the network after the 3+Name server's address has changed, he will see the message **Name server not responding.**

Managing Printers

As network administrator, you are responsible for maintaining printers on the network. Some printer management functions must be performed while you are logged in as the server-user, others while logged in as the administrator. Details of the various commands used in printer management are in Chapter 6.





NOTE: If you are using a printer with a large buffer configured for normal (i.e., non-interrupt) processing, 3+Share will attempt to fill the printer's buffer with information. This may cause servers that are heavily loaded with disk activity to become temporarily unavailable to users. If this occurs, users will receive error messages indicating network timeouts. To remedy the situation, you should run the 3INSTALL program and specify a smaller print buffer in the printer configuration. For more information, see the *3+ Installation and Configuration Guide*.

This section describes printer management functions that involve use of multiple commands:

- ▶ Changing a printer name
- ▶ Changing a printer configuration
- ▶ Adding and deleting printers from the network
- ▶ Reordering print queues.

Changing a Printer Sharename

The printer sharename is assigned when a server-user uses the 3P SHARE command to share the printer.

To change a printer sharename:

1. Log in as the server-user for the server to which the printer is attached.

```
A>LOGIN finance ←  
Login 1.1-Copyright (c) 3Com  
Corporation 1986. All rights reserved.
```

```
FINANCE:HQ:3COM logged in.
```

2. Link to the APPS directory and make it the default drive.

```
A>3P LINK d: apps ◀  
D: linked to \\FINANCE:HQ:3COM\APPS.  
A>d: ◀  
D>
```

3. Disallow sharing of the printer with the 3P UNSHARE command, specifying the current printer sharename.

```
D>3P UNSHARE ? ◀  
Printer Sharename? Laserjet ◀  
\\Finance:HQ:3Com\Laserjet unshared.  
D>
```

4. Share the printer again, using the 3P SHARE command, and specify a new printer sharename when prompted.

```
D>3P SHARE ? ◀  
Printer Sharename? Letters ◀  
Printer Id? lpt2: ◀  
Password? ◀  
\\Finance:HQ:3Com\Letters shared.  
D>
```


■ Changing a Printer's Configuration

Occasionally you may need to change part of a printer's configuration. For example, you may discover the printer was configured incorrectly at installation. In such a case, you may need to add or change the printer's reset sequence.

To change the configuration of a printer:

1. If you have not already done so, log in as Admin.

```
A>LOGIN admin ◀
Login 1.1-Copyright (c) 3Com
Corporation 1986.
All rights reserved.
```

```
Admin:HQ:3Com logged in.
```

```
A>
```

2. Use the 3F LINK command to link the shared directory 3CONFIG to D: and make D: the default drive.

```
A>3F LINK 3config d: ◀
D: linked to \\FINANCE:HQ:3COM\APPS.
```

```
A>d: ◀
D>
```

3. Run the 3INSTALL program and make the necessary configuration changes. For details on using the 3INSTALL program, see the *3+ Installation and Configuration Guide*.
4. Inform users that the server will be shut down and ask them to unlink from everything on that server.

5. To shut down all 3+ network software running on the server, follow the instructions in this chapter's last section "Shutting Down Network Services."
6. Restart the server.



NOTE: The configuration changes you made will take effect only after you restart the server.

Adding a Printer

To add a new printer to a server:

1. Inform users that the 3+File and 3+Print services on the server will be shut down, and ask them to unlink from everything on that server.
2. To shut down all 3+ network software running on the server, follow the instructions in the last section "Shutting Down Network Services."
3. Attach the printer to the server. For assistance, see the manual that comes with your printer.
4. Restart the server and choose the menu item **Run the 3Install Program**.
5. In the 3INSTALL program, choose **Configure Server Parameters**. Change the 3Share parameters and add the new printer information.
6. Restart the server.

7. Log in as the server-user. Link to the APPS directory and make it the default drive.

```
A>LOGIN finance ←  
Login 1.1-Copyright (c) 3Com  
Corporation 1986. All rights reserved.
```

```
Password? pass ←  
Finance:HQ:3Com logged in.
```

```
A>3F LINK d: apps ←  
D: linked to \\FINANCE:HQ:3COM\APPS.
```

```
A>d: ←  
D>
```

8. Type the 3P SHARE command and give the new printer a sharename. This is the name that will be used to link to the printer.

```
D>3P SHARE ? ←  
Printer Sharename? Laserjet ←  
Printer Id? lpt2: ←  
Password? ←  
\\Finance:HQ:3Com\Laserjet shared.  
D>
```

■ Deleting a Printer

To delete a printer from the network:

1. Inform users that the printer will be deleted, and have them unlink from it.
2. Log in as the server-user for the server to which the printer is attached.

```
A>LOGIN finance ◀  
Login 1.1-Copyright (c) 3Com  
Corporation 1986. All rights reserved.
```

```
Password? pass ◀  
Finance:HQ:3Com logged in.  
A>
```

3. Link the APPS directory to D: and make D: the default drive.

```
A>3F LINK d: apps ◀  
D: linked to \\FINANCE:HQ:3COM\APPS
```

```
A>d: ◀  
D>
```

4. Link to the printer you want to delete.

```
D>3P LINK laserjet ◀  
\\FINANCE:HQ:3COM\LASERJET linked to PRN:  
D>
```

5. Use the 3P QSTAT command to see if there are files in the print queue. If there are, you will need to either let them print or move them to another printer.

```
D>3P QSTAT 
Printer Id (PRN:)?
Spool ID ? all
```

```
Queue for \\FINANCE:HQ:3COM\LASERJET:
```

```
5 Size: 687 Status: Printing Time 6-24-86 10:44a
Pri: 50 Copies: 1 Form: 1
Owner: JOHN DOE
```

```
20 Size: 283 Status: Waiting Time: 6-24-86 10:55a
Pri: 50 Copies: 1 Form: 1
Owner: JOHN DOE
```

```
D>
```

6. If you do not want the files to be printed, log in as Admin and use the 3P STOP command to halt printing. Then use the 3P MOVQ command to move the print queue to another printer. For information about these two commands, see Chapter 6.

7. Disallow sharing of the printer by using the 3P UNSHARE command.

```
D>3P UNSHARE ? 
Printer Sharename? laserjet 
\\Finance:HQ:3Com\Laserjet unshared.
```

D>

8. To shut down the server, follow the instructions in this chapter's last section, "Shutting Down Network Service."
9. Disconnect the printer from the server.
10. Restart the server and choose the menu item **Run the 3Install Program**.
11. In the 3INSTALL program, choose **Configure Server Parameters**. Change the 3Share parameters and add the new printer information.
12. Restart the server.

Reordering a Print Queue

You can change the priority of a file in a print queue as long as the file is not printing. You will want to do this if for some reason a user is not available to change the priority of his own file.

As an Administrator, you can also change the priority of all files in a print queue. This may be helpful if several users have designated their files high priority, causing other users' files to be excessively delayed in printing.

When you reorder a file in a print queue, you must indicate the **printer identifier** for the printer you want to reorder. A printer identifier is one of the device names (PRN: or LPT1:, LPT2:, or LPT3:) that specifies the link to the shared printer whose queue you want to reorder. If you do not specify a printer identifier, the 3+Print service assumes the printer identifier PRN: (LPT1:). If you do not specify a printer identifier and you are not linked to PRN:, you receive an error message.

You must also specify a **spoolid** (spool identifier) when you reorder files in a print queue. A spoolid is a file's identification when it is in the queue. To find the spoolid of a particular file, use the 3P QSTAT command. To change the priority of all files in the print queue, type **ALL** when the service prompts you for the spoolid.

■ To change the priority of a file in a queue:

1. Log in as the administrator.

```
A>LOGIN admin ↵
Login 1.1-Copyright (c) 3Com
Corporation 1986. All rights reserved

Password? pass ↵

ADMIN:HQ:3COM logged in.
A>
```

2. Link the APPS directory to D: and make D: the default drive.

```
A>3F LINK d: \\sys\apps ↵
D: linked to \\FINANCE:HQ:3COM\APPS

A>d: ↵
D>
```

3. Link to the printer whose file you want to reorder.

```
D>3P LINK ? ↵
Printer Id (PRN:)? lpt2: ↵
Printer Sharename? laserjet ↵
Password ? ↵
LPT1: linked to \\Finance:HQ:3Com\Laserjet.
```


4. Type the 3P QSTAT command to determine the spoolid of the file.

```
D>3P QSTAT ? 
Printer Id (PRN:)? lpt2:
Spool Id? all
```

```
Queue for \\Finance:HQ:3Com\Laserjet:
```

```
5 Size:26 Status: Waiting Time: 1-01-80 0:32a
Pri: 50 Copies: 1 Form: 1
```

Note the spoolid number for the file you want to reorder.
In this example, it is 5.

5. Type the 3P SET command and give the priority and spool identifier for the file when prompted. If the printer identifier is different from the one listed, type it when prompted.

```
3P SET ? 
Printer Id (PRN:)? lpt2: 
Hold [ON/OFF]? 
Copies? 
Priority? 99 
Defer [ON/OFF]? 
Form Number? 
Spool Id? 5
\\Finance:HQ:3Com\Laserjet set.
```

Managing the 3+Remote Service

If you have installed the 3+Remote service, you need to manage both the server software and the remote users on the network.

Management of the server operation includes:

- ▶ Maintaining the telephone line and modem connections
- ▶ Adding modems when necessary
- ▶ Removing or replacing modems when necessary.

Maintenance of telephone lines and modems is normally not time-consuming. If users try to access the system and the modem does not answer, check to make sure the modem is connected properly and has power.

If you add, remove, or replace a modem on the server, you must update the 3+Remote service to reflect those changes. To do this, run the 3INSTALL program. Once you have made the changes, you must shut down and then restart the server. To shut down, follow the instructions in "Shutting Down Network Service" at the end of this chapter. After the software has been shut down properly, restart the server.

Management of the remote users includes:

- ▶ Use of the 3N ADD USER command to add an entry to the Name service for each remote user. Details of this command are in Chapter 6.



NOTE: A single entry in the 3+Name service is sufficient for an individual user to use the network both locally and remotely.

- ▶ Assignment of a unique network number to each remote user. See Chapter 4 for information about assignment of these numbers.

Managing the 3+Route Service

If you have installed 3+Route, you need to manage:

- ▶ Updating 3+Route to understand:
 - o How to access remote networks
 - o What remote networks are available
 - o What modems are available for use
 - o What ports are available for use
- ▶ Monitoring the use of 3+Route
- ▶ Isolating communication problems

In addition, 3+Route includes the capabilities of the 3+Remote service. For information, see the section "Managing the 3+Remote Service" earlier in this chapter.

Updating the 3+Route Service

You will need to run the 3INSTALL program to update information for 3+Route if you:

- ▶ Add or delete a network from the list of networks with which 3+Route can communicate
- ▶ Add, delete, or modify a remote network's telephone number
- ▶ Add, delete, or modify a telephone line or port available to 3+Route
- ▶ Add, delete, or modify modems

Monitoring Use and Isolating Problems

The 3+Route service writes entries to a log file, STATUS.LOG, in the \3ROOT directory. These entries record incoming and outgoing telephone calls and any errors that may occur. You can use the entries in STATUS.LOG to monitor the use of 3+Route and to help isolate communication problems.

Accessing STATUS.LOG

To read the STATUS.LOG file, use the STATUS program in the \3ROOT directory. How you access the file depends on the server's configuration. Appendix A contains information concerning messages displayed in the STATUS.LOG file.

Follow the steps below if you are working as a:

- ▶ Concurrent user
- ▶ Concurrent server with 3+File and 3+Print services, or
- ▶ Concurrent server without the 3+File and 3+Print services; access in this case is read-only.

1. Make drive C: the current drive.

```
A>c: ◀  
C>
```

2. Use the STATUS program to view the STATUS.LOG file.

```
C>STATUS status.log ◀  
  
CALL: Originate NET: 0040009 PORT: COM2  
CALL: Terminate NET: 0040009 PORT: COM2  
XNS PKTS: xmtd:21 rcvd:13 xmterr:01 lost:01  
MNP PKTS: xmtd:21 rcvd:13 rxmtd:03 chksum:0 dups:0  
SERIAL: ovrns:00 brks:03 frms:02 parity:00  
  
C>
```

Follow these steps if you are working on a workstation.

1. Link \3ROOT to D: using the 3F LINK command and make D: the default drive.

```
A>3F LINK d: \\sys\3root ←  
D : linked to \\FINANCE:HQ:3COM\3ROOT.
```

```
A>D: ←  
D>
```

2. Use the STATUS program to view the STATUS.LOG file.

```
D>STATUS status.log ←  
  
CALL: Answer NET: 0040009 PORT: COM2  
CALL: Terminate NET: 0040009 PORT: COM2  
XNS PKTS: xmt:21 rcvd:13 xmerr:01 lost:01  
MNP PKTS: xmt:21 rcvd:13 rxmt:03 chksum:0 dups: 0  
SERIAL: ovrns:00 brks:03 frms:02 parity:0  
  
D>
```

Follow these steps if you are using a dedicated server without the 3+Share File and Print services installed:

- a. To shut down the server, follow instructions in this chapter's last section, "Shutting Down Network Services."
- b. Restart the server in DOS mode.
- c. Change directories to \3ROOT.

```
C>CD \3root ◀—  
C>
```

3. Use the STATUS program to view the STATUS.LOG file.

```
C>STATUS status.log ◀—
```

```
CALL:Originate NET:0040009 PORT:COM2
```

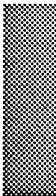
```
CALL:Terminate NET:0040009 PORT:COM2
```

```
XNS PKTS: xmttd:21 rcvd:13 xmterr:00 lost:01
```

```
MNP PKTS: xmttd:21 rcvd:13 rxmtd:03 chksum:0 dups:0
```

```
SERIAL: ovrns:00 brks:03 frms:02 parity:00
```

```
C>
```



Deinstalling and Moving Services

The deinstallation feature of 3+ services allows you to move a service from one server to another. You may wish to do this in the following situations:

- ▶ A server runs out of space. Moving a service to another server can make more space available to remaining services.
- ▶ A server is added to the network. You may therefore decide to move one or more of the existing services to it.
- ▶ A server is being replaced with a different machine. For example, if you upgrade from a PC to an AT server, you will need to deinstall and move the services.

The deinstall portion of the 3INSTALL program removes all files for the selected service that have an extension of .EXE. It also resets the copy protection feature on the service's installation diskette.

If your installation is new and no information is yet stored on the server, deinstallation is simply a matter of shutting down the server, running the 3INSTALL program, and selecting the deinstall menu item.

However, if you have been using a service and now need to deinstall it, be sure to save valuable information and move it with the service.



NOTE: Whenever you change the services installed on a server, certain parameters should be adjusted or tuned to compensate for the change. The *3+ Installation and Configuration Guide* contains detailed information about these parameters.

General guidelines for deinstalling each service are provided below.

The 3+Share File and Print Service

- ▶ Shut down the server being deinstalled. Follow the procedures in "Shutting Down Network Services" later in this chapter.
- ▶ Back up all home directories on the server being deinstalled.
- ▶ Back up the SHRLIST file in the \3PLUS directory.
- ▶ Delete all home directories.
- ▶ Deinstall the 3+Share File and Print service.
- ▶ Install the 3+Share File and Print service on the new server.
- ▶ Restore the backed up home directories to the new server.
- ▶ Restore the backed up SHRLIST file to the \3PLUS directory.
- ▶ Use the 3N MOD SERVER command to modify the services installed on both the old and the new server.
- ▶ Use the 3N MOD USER command to modify each user's Share server location.

The 3+Name Service

- ▶ Shut down the server being deinstalled. Follow the procedures in "Shutting Down Network Services" later in this chapter.



CAUTION: While the 3+Name service is out of operation, users will not be able to access any services on the network.

- ▶ Back up the \3PLUS\3NAME directory on the server being deinstalled.
- ▶ Deinstall the 3+Name service.
- ▶ Install the 3+Name service on the new server.
- ▶ Restore the backed up \3PLUS\3NAME directory to the new server.

The 3+Mail Service

- ▶ Use the 3N MOD command to delete each user's 3+Mail server location.
- ▶ Shut down the server being deinstalled. Follow the procedures in "Shutting Down Network Services" later in this chapter.
- ▶ Back up the \3PLUS\3MAIL directory using 3COPY, DOS BACKUP, or 3+Backup.



CAUTION: The 3+Mail service uses some zero-length files and empty subdirectories. The DOS COPY command will not back up these files and subdirectories correctly. To assure that a correct copy of the \3PLUS\3MAIL directory is made, use 3COPY, DOS BACKUP, or 3+Backup only.

- ▶ Delete all files and subdirectories in \3PLUS\3MAIL.
- ▶ Deinstall the 3+Mail service.
- ▶ Install the 3+Mail service on the new server.
- ▶ Restore the backed up \3PLUS\3MAIL directory to the new server.
- ▶ Use the 3N MOD SERVER command to modify the services installed on both the old and the new server.
- ▶ Use the 3N MOD command to modify each user's 3+Mail server location.

The 3+Remote or 3+Route Service

- ▶ Run the 3INSTALL program and generate a configuration report. Each time you generate such a report a file is created in the \3PLUS\3CONFIG directory. The file is given the name CONFDUMP.??? where ??? is a three-digit number beginning with 000. That is, each time you generate a report, a new CONFDUMP file is created with a consecutively numbered extension (e.g., CONFDUMP.000, CONFDUMP.001, CONFDUMP.002).
- ▶ Locate the newest CONFDUMP by using the DOS command DIR \3PLUS\3CONFIG\CONFDUMP.*. Make a note of the extension number of that newest file.
- ▶ Print the file.
- ▶ Shut down the server being deinstalled. Follow the procedures in "Shutting Down Network Services" later in this chapter.
- ▶ Deinstall the 3+Remote or 3+Route service.
- ▶ Move any asynchronous adapters, modems, and/or network adapters to the new server, as necessary.
- ▶ Install the 3+Remote or 3+Route service on the new server.
- ▶ Reconfigure the 3+Remote or 3+Route service, using the file you printed earlier as a guideline.
- ▶ Use the 3N MOD SERVER command to modify the services installed on both the old and the new server.

The 3+Start Service

- ▶ Back up the \3PLUS\3START directory on the server being deinstalled.
- ▶ Deinstall the 3+Start service.
- ▶ Install the 3+Start service on the new server.
- ▶ Restore the \3PLUS\3START directory to the new server.
- ▶ Use the 3N MOD SERVER command to modify the services installed on both the old and the new server.

Shutting Down Network Services

You will need to shut down the services on a server if you:

- ▶ Reinstall any of the network software
- ▶ Install a new network service on the server
- ▶ Add or reconfigure a printer
- ▶ Add or reconfigure a modem
- ▶ Want to turn off the server's power
- ▶ Have changed parameters using the 3INSTALL program
- ▶ Want to uninstall a service.



CAUTION: Never turn off a server's power without first shutting down the network software. Always be sure to shut down the 3+ Name service last. If these procedures are not followed, valuable data may be lost.



NOTE: To start network operations again after a shutdown, you must restart each server, beginning with the 3+Name service.



3+ Mail Service Shutdown

Use the 3M SHUTDOWN command to shut down the 3+Mail service.

1. Log in as the administrator.

```
A>LOGIN admin 
Login 1.1-Copyright (c) 3Com
Corporation 1986. All rights reserved.
```

```
Password? PASS 
```

```
Admin:HQ:3Com logged in.
```

```
A>
```

2. Link the APPS directory to D: and make D: the default drive.

```
A>3F LINK d: \\sys\apps 
D: linked to \\Finance:HQ:3Com\Apps.
```

```
A>d: 
D>
```

3. Type the 3M SHUTDOWN command and respond Y (yes) to the verification prompt.

```
D>3M SHUTDOWN 
Preparing to shutdown mail service on
Corporate:HQ:3Com.
Are you sure [Y/N]? Y 
Mail service shutdown.
D>
```



NOTE: The 3M SHUTDOWN command causes the 3+Mail service to halt on the default server. If you wish to halt 3+Mail service on a different server, you must first use the 3M SERVER= command to specify the server name. See Chapter 6 for details on using the 3M SERVER= command.

3+File and 3+Print Service Shutdown

The 3+File and 3+Print services on a server can both be shut down using either the 3F SHUTDOWN or 3P SHUTDOWN commands. Either command shuts down both the File and Print services for a given server. If you do not specify a server name, the File and Print services are shut down for your default file server.

Both the 3F SHUTDOWN and 3P SHUTDOWN commands have a /NEW option (**Disallow New Links?** is the prompt). This option prevents users from linking to directories and printers on a server. The /NEW option only prevents future links, it does not shut down the services. Use the /NEW option to prevent new links when shutdown is anticipated, and users already logged in to the network are finishing up and preparing to log out.

To shut down the 3+File and 3+Print services on a server:

1. Log in as the administrator.

```
A>LOGIN admin ◀
Login 1.1-Copyright (c) 3Com
Corporation 1986. All rights reserved.
```

```
Password? pass ◀
```

```
Admin:HQ:3Com logged in.
```

2. Link the APPS directory to D: and make D: the default drive.

```
A>3F LINK d: \\sys\apps ◀
D: linked to \\Finance:HQ:3Com\APPS.
```

```
A>d: ◀
D>
```

3. Type the 3F or 3P SHUTDOWN command and, when prompted, respond Y (yes) to disallow new links.

```
D>3P SHUTDOWN ? ◀
Server Name? finance ◀
Disallow new 3F and 3P links [Y/N]? Y ◀
Disallow new 3F and 3P links to
\\Finance:HQ:3Com [Y/N]? Y ◀
Shutdown services [Y/N]? N ◀
New links to \\Finance:HQ:3Com disallowed.
D>
```

4. Inform any users who are still linked to and working on the server that you are preparing to shut down the services. When they have finished saving their files and logged out, continue with Step 5.

5. Type the 3F or 3P SHUTDOWN command and, when prompted, respond **Y** (yes) to shut down the services.

```
D>3F SHUTDOWN ? 
Server Name? finance 
Disallow new 3F and 3P links [Y/N]? n 
Shutdown services [Y/N]? y 
Shutdown file and Print Service
on \\Finance:HQ:3Com [Y/N]? y 
\\Finance:HQ:3Com shutdown.
D>
```



NOTE: Before turning off the server's power, wait a few minutes. This allows the server ample time to finish closing all files.

The 3+File and 3+Print services have now been shut down. Before turning off the server, make sure to shut down any other network software.

Name Service Shutdown

The 3N SHUTDOWN command is used to shut down the 3+Name service and thus network operations. You should shut down the Name service only after shutting down the 3+File and 3+Print services on the network. Once network operations have been shut down, you must restart each server to start network operations again.

To shut down the 3+Name service and network operations:

1. Inform all network users that the network is shutting down so that they have time to finish their work and log out.
2. Make sure you have shut down the network's 3+File and 3+Print services.
3. Log in as the administrator.

```
A>LOGIN admin   
Login 1.1-Copyright (c) 3Com  
Corporation 1986. All rights reserved
```

```
Password? pass 
```

```
Admin:HQ:3Com logged in.
```

4. Insert the 3+Share User Software diskette in drive A:.



NOTE: You cannot link to the APPS directory to access the 3N command file because the 3+File service has been shut down.

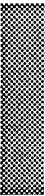
5. Type the 3N SHUTDOWN command.

```
A>3N SHUTDOWN ? ←  
Shutdown the Name Service [Y/N]? y ←  
The Name Service is shutdown.
```

The network is now completely shut down. You may turn off power to the server or servers without endangering any of the data. All servers must be restarted, beginning with the 3+Name service server, before network operations can be resumed.



NOTE: Before moving the server, check the manufacturer's instructions. To protect data, some hard disks require special care before moving.



Chapter 6: Command Reference

This chapter is a complete reference to all administrator and server-user commands, including those user commands that provide additional capabilities to server-users and administrators. This chapter provides the following information:

- ▶ Overview of administrator and server-user commands, organized by function
- ▶ Descriptions of administrator and server-user commands, organized alphabetically for easy reference

NOTE: Command descriptions are organized by service. The tabs on the edge of the page will assist you in locating commands for a particular service. Services are in the following order:



- ▶ 3+Share File service (3F)
- ▶ 3+Mail service (3M)
- ▶ 3+Name service (3N)
- ▶ 3+Share Print service (3P)
- ▶ 3+Start service (3S).

See Chapter 3 of this guide for a description of the command syntax notation used in this chapter.

See Chapter 4 of this guide for in-depth examples of using the most common administrator and server-user commands. For complete information on other user commands, see the *3+Share User's Guide* and the *3+Mail User's Guide*.

Command Overview

Administrator and Server-User Commands

Function	Command	Type	Page
3+Share File Service			
Change a first-level directory's access rights	3F MOD[IFY]	S	6-11
Change a first-level directory's attributes	3F MOD[IFY]	S	6-11
Change a first-level directory's password	3F MOD[IFY]	S	6-11
Create a first-level directory	3F SHARE	S	6-15
Delete a first-level directory's sharename	3F UNSHARE	S	6-27

Type: S = must be logged in as a server-user
 A = must have administrator capability

Function	Command	Type	Page
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3+Share File Service (cont.)

Shut down the 3+Share File and Print services	3F SHUTDOWN	A	6-21
Unlink a user from a server	3F UNLINK	A	6-25

Function	Command	Type	Page
3+Mail Service			
Delete first message waiting for delivery to a user	3M DEL1M	A	6-31
Delete first message waiting for delivery to another network	3M DEL1O	A	6-37
Delete all outgoing mail	3M DELO	A	6-33
Delete all undelivered mail	3M DELM	A	6-29
Display mail server status	3M STATUS	A	6-51
Display outgoing mail status	3M DIRO	A	6-43
Display undelivered mail status	3M DIRM	A	6-41
Get help for 3M commands	3M HELP or 3M?	A	6-45
Shut down 3+Mail service	3M SHUTDOWN	A	6-49
Specify a mail server	3M SERVER=		6-47

Function	Command	Type	Page
3+Name Service			
Add an alias	3N ADD ALIAS	A	6-53
Add a domain	3N ADD DOMAIN	A	6-55
Add a group	3N ADD GROUP	A	6-59
Add a member to a group	3N ADD MEMBER	A	6-61
Add a server	3N ADD SERVER	A	6-67
Add a service to a server	3N MOD[IFY]	A	6-91
Add a user	3N ADD USER	A	6-71
Change a domain	3N MOD[IFY] DOMAIN	A	6-101
Change a server's Ethernet address	3N MOD[IFY]	A	6-91
Change a server's network number	3N MOD[IFY]	A	6-91
Change a user/group/ server comment	3N MOD[IFY]	A	6-91
Change a user's capability class	3N MOD[IFY]	A	6-91

Function	Command	Type	Page
3+Name Service (cont.)			
Change a user's 3+Share File/3+Mail server	3N MOD[IFY]	A	6-91
Delete an alias	3N DEL ALIAS	A	6-81
Delete a domain	3N DEL DOMAIN	A	6-83
Delete a member from a group	3N DEL MEMBER	A	6-85
Delete a user, group, or server	3N DEL	A	6-77
Delete a user's password	3N MOD[IFY]	A	6-91
Set the time and date	3N SET	A	6-105
Shut down the 3+Name service	3N SHUTDOWN	A	6-107

Function	Command	Type	Page
3+Share Print Service			
Allow/disallow banner pages	3P RESUME	A/S	6-117
Allow/disallow new links to a printer	3P RESUME	A/S	6-117
Allow/disallow page ejects between jobs	3P RESUME	A/S	6-117
Break existing links to a printer	3P STOP	A	6-135
Change form number used for a file	3P SET	A	6-125
Change form number used on a printer	3P RESUME	A/S	6-117
Change a printer's password	3P MOD[IFY]	S	6-113
Change priority or defer printing of a file	3P SET	A	6-125
Delete one or more spool files	3P DEL	A	6-109

Function	Command	Type	Page
3+Share Print Service (cont.)			
Make a printer available for sharing	3P SHARE	S	6-129
Move a print queue to another printer	3P MOVQ	A	6-115
Prevent new links to a printer	3P STOP	A	6-135
Print multiple copies of a file	3P SET	A	6-125
Resume printing	3P RESUME	A/S	6-117
Shut down the 3+Share File and Print services	3P SHUTDOWN	A	6-133
Stop printing	3P STOP	A	6-135
Stop the sharing of a printer	3P UNSHARE	S	6-141
Unlink a user from a server	3P UNLINK	A	6-139

Function	Command	Type	Page
3+Start Service			
Change a 3+Start volume	3S MOD[IFY]	A	6-155
Create a new 3+Start volume	3S CREATE	A	6-143
Delete a 3+Start volume	3S DEL[ETE]	A	6-147
Display information on 3+Start volumes	3S DIR	A	6-149
Link a 3+Start volume to C:	3S LINK	A	6-153
Unlink a user or users from a 3+Start volume	3S UNLINK	A	6-158

Type: S = must be logged in as a server-user
 A = must have administrator capability

6

Command Reference

6-10

3F MOD

Modifies the password and access rights of a first-level directory's sharename.

Format

3F MOD[IFY] *sharename* | *path* [/PASS=*pass*] [/access]

Required Capability

Server-user

Parameter

- | | |
|------------------|---|
| <i>sharename</i> | The sharename you want to modify. This is the name assigned to a directory when the directory is shared with the 3F SHARE command. If the directory has multiple sharenames, you must modify each sharename individually. |
| <i>path</i> | The path you want to modify. If the directory was shared and not assigned a sharename, you must specify the directory by its path. The path is specified beginning with the root directory of the disk drive on which the directory resides. The path specification cannot include a drive identifier or a leading backslash. |

pass

The new password you are assigning to the sharename. If you include the **/PASS=** keyword and omit the **pass** parameter, the current password is deleted. If you omit **/PASS=pass** altogether, the current password does not change. A password is eight characters or fewer. The allowed characters are: letters (A through Z and a through z), digits (0 through 9), the special characters **\$&#@!%''()-{}_**, and the international characters supported by the IBM PC.

access

The new access rights you are assigning to the sharename. The access rights must be one of the following: **PUB, R, RW, RWC, WC, W, or SHAR**. If you omit **/access**, the access rights for the sharename do not change. For a discussion of access rights, see the **3F SHARE** command in this chapter.

Remarks

Although the **3F MOD** command is both a user and server-user command, these remarks concern capabilities reserved for server-users. For a complete discussion of the capabilities available to all users, see the *3+Share User's Guide*.

The **3F MOD** command modifies the password and access rights associated with a first-level directory's sharename. It shares the directory and assigns it a sharename. If the directory was shared but not assigned a sharename, you must specify the directory's path instead of a sharename. For information on using the **3F SHARE** command with first-level directories, see the **3F SHARE** command in this chapter.

You can only modify the sharenames of first-level directories residing on the server for which you are logged in as the server-user. To modify the sharename of a first-level directory on another server, you must first log in as that server's server-user.

You can use the 3F MOD command to modify the password and access rights associated with the sharename but not the sharename itself. To change a directory's sharename, use the 3F UNSHARE command to delete the sharename and then use the 3F SHARE command to assign a new sharename.

You can assign the same directory several different sharenames. Each sharename can have a different password and access rights. For more information, see the 3F SHARE command in this chapter.

You can modify a sharename even while users are linked to the directory through that sharename. Changing the password and access rights does not affect users currently linked through the sharename, only new links. You can, for example, prevent users from establishing new links through a sharename by giving the sharename a new password. If a directory has several sharenames, the modifications only affect the specified sharename. Linking to the directory through other sharenames is unaffected.

Examples

Example 1: Changing the password of a sharename.

```
3F MOD apps /PASS=newpass ↵  
\\FINANCE:HQ:3COM\APPS modified.
```

Example 2: Deleting the password for a sharename.

```
3F MOD apps /PASS= ↵  
\\FINANCE:HQ:3COM\APPS modified.
```

Example 3: Changing the password and access rights of a sharename.

```
3F MOD apps /PASS=newpass /ACCESS=rwc ↵  
\\FINANCE:HQ:3COM\APPS modified.
```

Example 4: Changing access rights using prompted mode.

```
3F MODIFY ? ↵  
Name? share1 ↵  
New Password (****)? ↵  
New Access (/RWC)? /pub ↵  
\\FINANCE:HQ:3COM\SHARE1 modified.
```


3F SHARE

Creates a first-level directory and shares it.

Format

3F SHARE [*sharename*=]*path*[/PASS=*pass*] [/access]

Required Capability

Server-user

Parameters

sharename

A name that identifies the directory on the network. All users may link to the directory through its sharename(s). A single directory can have multiple sharenames, each with different passwords and access rights. If you do not assign a sharename, users must identify the directory by its path.

A sharename is eight characters or fewer. The allowed characters are: letters (A through Z and a through z), digits (0 through 9), the special characters \$&#@!%()-{}_, and the international characters supported by the IBM PC. Each sharename for directories on the same server must be unique.

path

The path to the directory you want to share. The path must begin with the drive identifier of the drive on which the directory resides. If you do not assign the directory a sharename, users must specify its path (without the leading drive identifier) when they want to link to it.

pass

The password you are assigning to a particular sharename. If assigned, all users, except the server-user, must supply the password to link to the directory through that sharename. If you do not assign the password, any user can link to the directory through that sharename. A password is eight characters or fewer. The allowed characters are: letters (A through Z and a through z), digits (0 through 9), the special characters \$&#@!%()-{}_ , and the international characters supported by the IBM PC.

access

The type of operations users can perform on the contents of the directory. The access rights must be one of the following: PUB, R, W, RW, RWC, WC, and SHAR. If you do not assign access rights, the 3+Share File service assigns **/RWC** by default. A server-user cannot assign PRIV (private) access rights to a directory. See the following remarks for more information on access rights.

Remarks

Although the 3F SHARE command is both a user and server-user command, these remarks concern the capabilities reserved for server-users. For a complete discussion of the capabilities available to all users, see the *3+Share User's Guide*.

The 3F SHARE command shares a first-level directory, allowing network users to link to it. If the directory you specify does not exist, the 3F SHARE command creates it.

Typically, administrators use the 3F SHARE command to create and share first-level directories that contain files used by many network users. One such directory is an APPS directory containing program files.

Sharenames

Using the 3F SHARE command, you can assign a sharename to the specified directory. Once assigned, the sharename then identifies that directory on the network. You can use the 3F SHARE command several times on the same directory, assigning a different sharename each time. Each sharename can have a different password and access rights.

If you share a directory and do not assign a sharename, all users must specify the directory by its path. To link to a directory in this case, users must specify the path in place of a sharename in the 3F LINK command. In general, assigning a sharename is preferable, but some applications may require directories specified by paths. For such applications, you can share a directory with the 3F SHARE command without assigning a sharename.

If you do not assign a sharename, you can use the 3F SHARE command on a directory only once. Before using the 3F SHARE command on the same directory a second time, you must assign it a sharename.

The number of sharenames you can assign to a directory is limited only by the number of shared directories and shared printers the 3+Share File and Print services can support. Each different sharename counts as one shared directory. The default number of shared directories and printers the 3+Share File and Print services can support is 19. For information on changing the default number, see the *3+Installation and Configuration Guide*.

Passwords

If you share a directory and assign a password to that sharename, all users must supply the password before linking to the directory with that sharename. The server-user, however, need not supply the password before linking to the directory.

If you share a directory without a password, no password is required to link to the directory with that sharename. If you want to share a directory with all users, do not assign a password to the directory's sharename.

Access Rights

Server-users can assign the following access rights:

- ▶ PUB, or public, allows users to read but not alter the contents of the directory and its subdirectories.
- ▶ R, or read, allows users to read but not alter the contents of the directory and its subdirectories. R is the same as PUB.
- ▶ W, or write, allows users to write to files in the directory and its subdirectories. Users cannot read the files.
- ▶ RW, or read and write, allows users to read from and write to files in the directory and its subdirectories. Users cannot create or delete files and subdirectories.
- ▶ RWC, or read, write, and create, allows users to read from, write to, create, and delete files and subdirectories in the directory and its subdirectories.

- ▶ WC, or write and create, allows users to write to, create, and delete files and subdirectories in the directory and its subdirectories. Users cannot read files in the directory and its subdirectories.
- ▶ SHAR, or share, allows the user all the access rights of RWC and the right to share the directory and its subdirectories.

Most first-level directories contain shared program and data files. For directories containing shared programs, PUB or R are usually the appropriate access rights. For directories containing shared data files, RW or RWC are usually the appropriate access rights. If you are using a multiuser network application, refer to that application's documentation for more information on the access rights you should assign to the directories for its data files.

If you do not assign access rights, the 3+Share File service assigns RWC access rights, the default for server-users. The default for users is PRIV (private) access rights.

Examples

Example 1: Making a directory of public programs available for sharing, and assigning the directory APPSV1 the sharename APPS.

```
3F SHARE apps=c:\apps /PUB <—  
\\FINANCE:HQ:3COM\APPS shared.
```

Example 2: Making the same directory as above available for sharing with no sharename, RWC access rights, and a password.

```
3F SHARE c:\apps /PASS=qyx31 /RWC <—  
\\FINANCE:HQ:3COM\C:\APPSV shared.
```

Example 3: Making a directory available for sharing with public access rights, using the prompted mode.

```
3F SHARE ? <—  
Sharename? wordstar <—  
Path? c:\apps\wordstar <—  
Password? <—  
Access (/RWC)? /pub <—  
\\FINANCE:HQ:3COM\WORDSTAR shared.
```

3F SHUTDOWN

Shuts down the 3+Share File and Print services on the specified server.

Format

3F SHUTDOWN [*\\server*] [/NEW] [/NP]

Required Capability

Administrator

Parameters

- | | |
|---------------|--|
| <i>server</i> | The three-part name of the server whose 3+Share File and Print services you want to shut down. If you omit this parameter, the default is your File server. |
| <i>NEW</i> | Disables new links to shared directories and printers on the specified (or default) server. Users with existing links to shared directories and printers on the specified server can continue to establish new links. NEW does not shut down the services or break existing links. |
| <i>NP</i> | Suppresses the request for verification. |

Remarks

The 3F SHUTDOWN command stops the 3+Share File and Print services on the server. 3F SHUTDOWN is the same as the 3P SHUTDOWN command described later in this chapter. The 3F (or 3P) SHUTDOWN command is the only correct way to stop the 3+Share File and Print services on a server. Use the 3F SHUTDOWN command whenever you need to stop network operations.

The 3+Name service should always be the last service to be shut down. Shut down the network one server at a time, ending with the 3+Name service server. To start network operations again, you must restart each server. Always restart the 3+Name service server first, then restart any remaining servers, in any order.

You can use the NEW option to prevent users who have no existing links from linking to shared directories and printers on the server. Users with existing links can still establish new links to shared directories and printers on the server. Using the 3F SHUTDOWN command with this option does not shut down the 3+Share File and Print services; the command just prevents new users from establishing new links. Typically, this form of the 3F SHUTDOWN command is used before a full network shutdown, preventing new links while giving users on the network time to finish before the network shuts down altogether.

Examples

Example 1: Shutting down the 3+Share File and Print services on a server.

```
3F SHUTDOWN \\Finance ◀  
Shutdown File and Print Service on  
\\Server1:HQ:3Com [Y/N]? Y ◀  
\\FINANCE:HQ:3COM shutdown.
```

Example 2: Preventing new links to a server, with no verification.

```
3F SHUTDOWN \\Finance /NEW /NP ◀  
NEW LINKS TO \\FINANCE:HQ:3COM DISABLED.
```


Example 3: Preventing new links to a server, using the prompted mode.

```
3F SHUTDOWN? 
ServerName? finance 
Disallow New Links [Y/N]? y 
Shutdown File and Print Service on
\\Finance:HQ:3Com [Y/N]? n 
NEW LINKS TO \\FINANCE:HQ:3COM DISABLED
```

6

Command Reference

6-24

3F UNLINK

Unlinks a user from shared directories and printers on the specified server.

Format

3F UNLINK *user* [*server*] /NP]

Required Capability

Administrator

Parameters

<i>user</i>	The three-part name of the user you want to unlink.
<i>server</i>	The three-part name of the server from which you want to unlink the user. If you do not specify a server, the 3+Share File service unlinks the user from your default File server.
NP	Suppresses the request for verification.

Remarks

Although the 3F UNLINK command is both a user and an administrator command, these remarks concern the capabilities reserved for administrators. For a complete discussion of the capabilities available to all users, see the *3+Share User's Guide*.

The 3F UNLINK command breaks all links between the specified user and shared directories and printers on the specified server. If you do not specify the server, the command affects your default File server.

The 3F UNLINK command breaks the links at the server. The user software, and consequently the user, is not informed of the break. After the forced unlink, any attempts by the user software to use the broken links will produce NET804 and NET805 errors. Before continuing with network operations, the user's workstation should be restarted.

If the user is logged in more than once, all links by that user are broken, even if the links are from separate workstations.

Examples

Example 1: Unlinking a user from your default file server.

```
3F UNLINK \\fred jones ←  
CAUTION: Unlinks both 3F and 3P links!  
Unlink \\Fred Jones:HQ:3Com from  
\\Finance:HQ:3Com [Y/N]? y ←  
\\Fred Jones:HQ:3Com unlinked from  
\\Finance:HQ:3Com.
```

Example 2: Unlinking a user from a specified file server, without verification.

```
3F UNLINK \\fred jones \\finance /NP ←  
CAUTION: Unlinks both 3F and 3P links!  
\\fred jones:HQ:3Com unlinked from  
\\finance:HQ:3Com.
```

3F UNSHARE

Deletes a sharename.

Format

3F UNSHARE *sharename* | *path*

Required Capability

Server-user

Parameters

sharename

The sharename you are deleting. This is the name assigned to the directory when it was shared with the 3F SHARE command. If the directory has several sharenames, you must delete each individually.

path

The name of the path to the specified directory. If this particular directory was shared and not assigned a sharename, you must identify the directory by its path. The path name begins with the root directory of the disk drive on which this particular directory resides. The path name cannot include a drive identifier or a leading backslash.

Remarks

Although the 3F UNSHARE command is both a user and server-user command, these remarks concern the capabilities reserved for server-users. For a complete discussion of the capabilities available to all users, see the *3+Share User's Guide*.

The 3F UNSHARE command deletes the specified sharename. If the deleted sharename was the directory's only sharename, the directory is no longer available for use on the network. If the directory had more than one sharename, the directory can still be linked to through its other sharenames. For more information on multiple sharenames, see the 3F SHARE command earlier in this chapter.

You can only use the 3F UNSHARE command with a sharename whose directory resides on the server for which you are logged in as the server-user. You cannot use the 3F UNSHARE command on a sharename that is in use. If a user is linked to the directory through the specified sharename (or path), the 3F UNSHARE command will return an error message and the sharename will not be deleted.

Examples

Example 1: Deleting a sharename.

```
3F UNSHARE apps ◀  
\\FINANCE:HQ:3COM\APPS unshared.
```

Example 2: Making a directory without a sharename unavailable for sharing.

```
3F UNSHARE apps ◀  
\\FINANCE:HQ:3COM\C:\APPS unshared.
```

Example 3: Deleting a sharename, using prompted mode.

```
3F UNSHARE ? ◀  
Sharename?share2 ◀  
\\FINANCE:HQ:3COM\SHARE2 unshared.
```

3MDELM

Deletes undelivered mail (mail that has been sent to but not yet retrieved by users).

Format

3MDELM *user* [/NP]

Required Capability

Administrator

Parameters

user The three-part name of the user whose undelivered mail you are deleting. To delete undelivered mail for all users on the server, enter an asterisk (*).

NP Suppresses the request for verification.

Remarks

The 3MDELM command deletes all mail that has not been retrieved by the user you specify or by all users on the server. DELM does not delete mailboxes.

If an employee changes location or leaves the company, you can delete mail waiting to be delivered to that employee by using the DELM command.

If you do not specify the domain and organization, 3+Mail uses the last specified domain and organization, usually the domain and organization you logged in with before executing the command.

Examples

Example 1: Deleting a specific user's mail.

```
3M DELM Barbara Cole <—  
Are you sure ? (Y/N) y <—  
Deleting contents of mailbox  
for Barbara Cole:HQ:3Com  
on corporate:HQ:3Com...  
Done
```

Example 2: Deleting all users' mail with no verification.

```
3M DELM * /NP <—  
Deleting contents of mailbox for *:HQ:3Com on  
Corporate:HQ:3Com...  
Done
```

Example 3: Deleting a specific user's mail, using a prompted mode.

```
3M DELM ? <—  
Name? barbara cole <—  
Are you sure ? (Y/N) y <—  
Deleting contents of mailbox  
for barbara cole:HQ:  
3Com on Corporate:HQ:3Com...  
Done
```


3M DEL1M

Deletes the first message in the queue waiting to be delivered to a user.

Format

3M DEL1M *user*

Required Capability

Administrator

Parameters

user The three-part name of the user whose undelivered first message you want to delete.

Remarks

The 3M DEL1M command deletes the first message in the queue of messages waiting to be delivered to a user. This may be necessary if a message is undeliverable because of improper formatting. It may also be necessary when a message with a particularly large attachment is not deliverable due to lack of disk space, is blocking the delivery of subsequent mail, and is causing an error condition for that user.

Examples

Example 1: Deleting the first message in a user's message queue.

```
3M DEL1M roger bowman <—  
Deleting earliest message for roger  
bowman:HQ:3Com on Corporate:HQ:3Com...  
Done
```

Example 2: Deleting the first message in a user's message queue, using a prompted mode.

```
3M DEL1M ? ◀
Username? roger bowman ◀
DELETING EARLIEST MESSAGE FOR
ROGER BOWMAN:HQ:3COM ON CORPORATE:HQ:3Com...
DONE
```

3M DELO

Deletes outgoing mail waiting to be relayed to another server.



NOTE: The "O" in this command refers to the letter O, not the number zero.

Format

3M DELO *network:server* [/NP]

Required Capability

Administrator

Parameters

network

The number assigned to the network on which the specified server resides.

server

The network address of the server for which outgoing mail is destined and should be deleted.



NOTE: Server addresses and associated server names are registered in the 3+Name service.

NP

Suppresses the request for verification.

Remarks

The 3M DELO command deletes all outgoing mail destined for the specified server or for all servers when the wildcard *.* is used.



NOTE: Only mail being sent to the specified server is deleted. The 3M DELO command does not affect mail that has been received and is waiting to be delivered.

The 3M DIRO command can be used to display a list of servers to which outgoing mail is addressed and waiting to be sent. Details on this are shown later in this chapter.

Examples

Example 1: Deleting outgoing mail for a specific server.

```
3M DELO 0040400:02608C392084 <—  
Are you sure [Y/N]? y  
Deleting mail on Corporate:HQ:3Com  
outbound to network 0040400:Server  
address 02608C392084...  
Done
```

Example 2: Deleting all outgoing mail without verification.

```
3M DELO *:* /NP <—  
Deleting mail on corporate:HQ:3Com outbound to  
network *: Server address *...
```

Example 3: Deleting outgoing mail for a specific server, using a prompted mode.

```
3M DELO ? <—|
Network Address ? 0040400 <—|
Server Address? 02608C0392084 <—|
Are you sure [Y/N]? y
Deleting mail on Corporate:HQ:3com outbound
to network 0040400:Server address 02608C392084...
```

6

Command Reference

6-36

3MDEL10

Deletes the oldest outgoing mail message waiting to be relayed to another server.



NOTE: The "O" in this command refers to the letter O, not the number zero.

Format

3M DEL10 *network:server* [/NP]

Required Capability

Administrator

Parameters

network The number assigned to the network on which the specified server resides.

server The network address of the server for which you want to delete the oldest outgoing mail message.



NOTE: Server addresses and associated server names are registered in the Name service.

NP Suppresses the request for verification.

Remarks

The 3M DEL10 command deletes the oldest message waiting to be delivered to the specified server.



NOTE: Only the oldest message being sent to the specified server is deleted. The DEL10 command does not affect mail that the server has received and is waiting to deliver or other outgoing mail waiting to be delivered to the specified server.

To display a list of servers to which outgoing mail is addressed and waiting to be sent, use the 3M DIRO command. Details on using this command are shown later in this chapter.

Examples

Example 1: Deleting the oldest outgoing mail message for a specific server.

```
3M DEL10 0040400:02608C392084 ␣
Are you sure [Y/N]? y ␣
Deleting oldest mail on Corporate:HQ:3Com
outbound to network 0040400:server address
02608C392084 ...
Done
```

Example 2: Deleting the oldest outgoing mail message for a specific server, using a prompted mode.

```
3M DEL10 ? ␣
Network Address? 0040400 ␣
Server Address? 02608C0392084 ␣
Are you sure [Y/N]? y ␣
DELETING OLDEST MAIL ON CORPORATE:HQ:3Com
outbound to network 0040400:server address
02608C392084 ...
Done
```


Example 3: Deleting the oldest outgoing mail message for a specific server, without verification.

```
3M DEL10 0040400:02608C392084 /NP ←  
Deleting oldest mail on Corporate:HQ:3Com outbound  
to network 0040400:server address 02608C392084 ...  
Done
```

6

Command Reference

6-40

3M DIRM

Lists users who have mail to retrieve and the number of their respective messages waiting.

Format

3M DIRM [/NP]

Required Capability

Administrator

Parameters

NP Suppresses the request for verification.

Remarks

Undelivered mail is mail that has not been retrieved by users. When an employee changes location within the company or leaves the company, you can use the 3M DIRM command to see whether his mailbox contains undelivered mail.

If you find mail that you want to delete, use the 3M DELM command.

Example

Listing users who have mail waiting to be retrieved.

```
3M DIRM ◀
```

```
Checking for user mailboxes on  
Corporate:HQ:3Com...
```

User name	# Messages
Richard Bowman:HQ:3Com	15
Barbara Cole:HQ:3Com	3
Susan Anthony:HQ:3Com	10



NOTE: If the list is longer than one screen display, use **[Ctrl]+[S]** to stop scrolling. Type **[Ctrl]+[S]** again to continue scrolling.

3M DIRO

Lists the addresses of servers to which outgoing mail is addressed and the number of their respective messages.



NOTE: The "O" in this command refers to the letter O, not the number 0.

Format

3M DIRO [/NP]

Required Capability

Administrator

Parameters

NP Suppresses the request for verification.

Remarks

Outgoing mail is mail waiting to be relayed to another server. If a server is going to be out of service for a prolonged time, you can use 3M DIRO command to see whether there is outgoing mail for that server. To delete the outgoing mail, use the 3M DELO command.

Example

Listing the address of servers to which outgoing mail is addressed.

3M DIRO ←

Checking outbound mail on Corporate:HQ:3Com...

Network:Server	address	Messages
00040400	02608C328640	20
00040400	02608C391084	3
00040401	02608C830192	10



NOTE: If the list is longer than one screen display, use **[Ctrl]+[S]** to stop scrolling. Type **[Ctrl]+[S]** again to continue scrolling.

3M HELP

Lists the 3+Mail management commands and their functions.

Format

3M HELP | ? [*command*]

Required Capability

Administrator

Parameters

command

The specific command for which information is desired.

Remarks

The 3M HELP or 3M ? command displays a list of the commands you can use to manage 3+Mail. For information about a particular command, enter the command name.

Examples

Example 1: Displaying a list of commands available for managing 3+Mail.

```
3M ? ↵
```

Enter one of the following commands:

Help

Diro

Dirm

Delo

Dello

DelM

Del1M

Status

Shutdown

Server=

Example 2: Displaying detailed information about 3M commands.

```
3M HELP ←  
Command Summary:  
DirO:      Directory of Outbound messages.  
           Show messages to be relayed to other mail servers  
DirM:      Directory of users' Mailboxes.  
           Show messages in users' mailboxes  
DelO:      Delete Outbound messages.  
           Delete messages to be relayed to other mail servers  
DelM:      Delete Messages  
           Delete all messages from a user's mailbox  
Del1M:     Delete One Message  
           Delete one message from a user's mailbox  
Status:    Show status of mail server  
Shutdown:  Shut down mail server in an orderly way  
Server0:   Connect to a different mail server
```

Example 3: Displaying information about a specific 3+Mail command.

```
3M HELP shutdown ←  
Shuts down the mail service on a server.
```


3MSERVER=

Specifies the mail server with which you want to work.

Format

3M SERVER= [*server*] [/NP]

Required Capability

Administrator

Parameters

- | | |
|---------------|--|
| <i>server</i> | The name of the server you want to work with.
If you omit this parameter, 3+Mail assumes you want to work with your default server. |
| NP | Suppresses the request for verification. |

Remarks

If you do not want to work on your default server, you need to specify the server before you enter any operational commands. The server you specify stays in effect until you exit the 3+Mail service or specify a different server.



NOTE: A space is required between the equal sign and the server name.

Example

Specifying the server on which you want to work.

```
3M SERVER= corporate:hq:3Com  ←
```

3M SHUTDOWN

Shuts down the 3+Mail service on a server.

Format

3M SHUTDOWN [/NP]

Required Capability

Administrator

Parameters

NP Suppresses the request for verification.

Remarks

The 3M SHUTDOWN command causes the 3+Mail software to halt service on the default server or the server you specified in the 3M SERVER= command. No other services are affected by the 3M SHUTDOWN command. This command assures an orderly shutdown of the 3+Mail service. All files are closed properly and the service is halted.

Examples

Example 1: Shutting down 3+Mail service on a server.

```
3M SHUTDOWN ◀
Preparing to shut down mail service on
Corporate:HQ:3Com.
Are you sure [Y/N]? y ◀
Mail service shut down.
```

Example 2: Shutting down 3+Mail service on a server, without verification.

```
3M SHUTDOWN /NP ←
```

```
Preparing to shut down mail service on  
CORPORATE:HQ:3Com.
```

```
Mail service shut down.
```

3MSTATUS

Displays configuration and current status information for the 3+Mail service.

Format

3M STATUS [/NP]

Required Capability

Administrator

Parameters

NP Suppresses the request for verification.

Remarks

The 3M STATUS command displays information about the default server or the server you specified in the SERVER= command.

The first six entries displayed contain configuration information entered during installation of 3+Mail on the server.

The remaining two entries describe the current status of 3+Mail on the server:

- ▶ The **current number of mailboxes** is the number in use at the time you requested the status display.
- ▶ The **number of remote users** is the number logged in at the time you requested the status display.

Example

Displaying configuration and current status information of a server.

```
3M STATUS  ←
```

```
Retrieving status for Corporate:HQ:3Com...
```

Mail S&F process sleeps:	30 seconds after each loop
Messages considered dead after:	24 hours
Maximum number of remote users:	1
Current number of remote users:	0
Number of server processes:	2
Maximum number of mailboxes:	64
Current number of mailboxes:	45

3N ADD ALIAS

Creates an alias for an entry in the 3+Name service.

Format

3N ADD ALIAS [\\]*name1*[:*domain*[:*organization*]]

Name? [\\]*name2*[:*domain*[:*organization*]]

Required Capability

Administrator

Parameters

name1:domain:organization

The three-part name of the alias you are creating. The three-part name must be unique within the Name service. If you omit this parameter from the command line, the service prompts you for it.

name2:domain:organization

The three-part name of the entry that the alias represents.

Remarks

Use aliases to create nicknames for users and to provide a shorthand notation for server names.

The 3N ADD ALIAS command creates an alias for an entry in the 3+Name service. The entry that the alias represents must already exist in the 3+Name service. The domain and organization of an alias need not be the same as the entry that the alias represents.

Examples

Example 1: Creating an alias for a user.

```
3N ADD ALIAS Freddy ←  
Name? fred jones ←  
Adding Alias Freddy:HQ:3Com for  
Fred Jones:HQ:3Com ...  
Alias Freddy:HQ:3Com added.
```

Example 2: Creating an alias for a user on another network.

```
3N ADD ALIAS Fred Afar ←  
Name? fred afar:nyny:othercorp ←  
Adding Alias Fred Afar:HQ:3Com for  
Fred Afar:NYNY:Othercorp ...  
Alias Fred Afar:HQ:3Com added.
```


3N ADD DOMAIN

Adds a domain to the 3+Name service.

Format

3N ADD DOMAIN *domain* [:*organization*]

Net Number? *netnum*

Required Capability

Administrator

Parameters

domain:organization

The name of the domain you are adding to the 3+Name service. The domain's name must be unique within its organization. If you specify a new organization as well as a new domain, the new organization is also added to the 3+Name service. If you omit this parameter, the service prompts you for it.

netnum

The number of the network on which the new domain resides. If the domain is on your network, press **[Return]** to accept the displayed default, which is the number of your network. If the domain is on another network, enter the number of that network. You will need to get the network number from the other network's administrator. A network number is an eight-character sequence of digits (0 through 9) and the letters A through F.

Remarks

The 3N ADD DOMAIN command adds a domain to the 3+Name service. Each domain name must be unique within its organization. The 3N ADD DOMAIN command also adds an organization to the 3+Name service if you specify a new organization as well as a new domain.

The most common use of 3N ADD DOMAIN is to add remote domains to the 3+Name service to support communication with other networks using 3+Route. You will need to get the network numbers of the other networks from their network administrators. You will also need to give other network administrators your network number. To see your network number, use the 3N STATUS command. For complete information on the use of the 3N STATUS command, see the *3+Share User's Guide*. For information on communicating with other 3+ networks, see Chapter 4 of this guide.

Examples

Example 1: Adding a domain on the same network.

```
3N ADD DOMAIN Warehouse ←  
Net Number (00040004)? ←  
Adding Domain Warehouse:3Com ...  
Domain Warehouse:3Com added.
```

Example 2: Adding a domain on a different network.

```
3N ADD DOMAIN NorthEast ←  
Net Number (00040004)? 00040009 ←  
Adding Domain NorthEast:3Com ...  
Domain NorthEast:3Com added.
```

Example 3: Adding a domain and organization.

```
3N ADD DOMAIN HQ:OtherCorp ←  
Net Number (00040004)? 000459A0 ←  
Adding Domain HQ:OtherCorp ...  
Domain HQ:OtherCorp added.
```

6

Command Reference

6-58

3N ADD GROUP

Adds a group to the 3+Name service.

Format

3N ADD GROUP [\\]*name*[:*domain*[:*organization*]]

Comment? *text*

Required Capability

Administrator

Parameters

name:domain:organization

The three-part name of the group you are adding to the 3+Name service. The name must be unique in the 3+Name service. If you omit this parameter, the service prompts you for it.

text

Enter any string of characters not longer than 100 characters. To skip this prompt, press **[Return]**.

Remarks

The 3N ADD GROUP command adds a group to the 3+Name service. Typically, groups are used to create and maintain distribution lists for use with 3Com's 3+Mail electronic mail product. Each group is a list of users who often receive the same mail. You can create a separate group for each distribution list.

Initially, a group has no members. You must add each member to the group using the 3N ADD MEMBER command. Groups, as well as users, can be members of a group. A single user or group can be the member of any number of groups. To delete members from a group, use the 3N DEL MEMBER command. These commands are discussed later in this chapter.

Example

Creating a group.

```
3N ADD GROUP sales ◀|
Adding Group sales:HQ:3Com ...
Comment? List of salesforce located at HQ ◀|
Group sales:HQ:3Com added.
```

3N ADD MEMBER

Adds a member to a group in the 3+Name service.

Format

3N ADD MEMBER [\\]*name1*[:*domain*[:*organization*]]

Group Name? [\\]*name2*[:*domain*[:*organization*]]

Required Capability

Administrator

Parameters

name1:domain:organization

The three-part name of the member you are adding. If you omit this parameter, the service prompts you for it.

name2:domain:organization

The three-part name of the group to which you are adding the member. To accept the displayed default, if any, which is the last referenced group, press **[Return]**. If no default is displayed, you must enter the name of the group.

Remarks

The 3N ADD MEMBER command adds a member to a group. The member can be a user or another group. Both the group and the member being added must already exist in the 3+Name service. For information on adding a group to the 3+Name service, see the 3N ADD GROUP command. For information on adding a user to the 3+Name service, see the 3N ADD USER command. For information on deleting a member from a group, see the 3N DEL MEMBER command.

Examples

Example 1: Adding a user to a group.

```
3N ADD MEMBER Fred Jones ◀
Group Name? sales ◀
Adding Member Fred Jones:HQ:3Com to
sales:HQ:3Com ...
Member Fred Jones:HQ:3Com added.
```

Example 2: Adding a group to a group.

```
3N ADD MEMBER sales ◀
Group Name? worldsales ◀
Adding Member sales:HQ:3Com to all
3Com worldsales:HQ:3Com ...
Member sales:HQ:3Com added.
```


3N ADD PROP

Adds a new property, or field, to the record definition for a class of entry, such as user or server, in the 3+Name service.

Format

3N ADD PROP *propnum*

PropertyType (S)? *type*
PropertyName? *propname*
PropertyDescription? *text*
PropertyLength? *proplen*
PropertyFormat (String)? *propformat*
Primary Property to add to? *entrytype*

Required Capability

Administrator

Parameters

propnum

A number that uniquely identifies the property. To avoid duplication with previously defined properties, the number should be in the range of 5000 through 9999. Duplicate property numbers are not allowed.

type

The type of property; primary or secondary. Primary properties should not be added. The default is secondary. Press **[Return]** in response to this prompt.

<i>propname</i>	The name of the property you are adding. The name is used as the prompt for the property in the appropriate 3N ADD command(s). The property's name can be 20 characters or fewer.
<i>text</i>	Any string of text not more than 132 characters.
<i>proplen</i>	The length of the property you are adding. The maximum length of a property is 256.
<i>propformat</i>	The format of the property. The default is string. Other formats will not function from the user interface. Press [Return] in response to this prompt.
<i>entrytype</i>	The class of entry to which you are adding the property. The supported values are USER and SERVER . This prompt is repeated until you press [Return] .

Remarks

The 3N ADD PROP command adds a new property or field to a class of entry in the 3+Name service. Properties are primarily intended for use by network applications. Properties should not be used to store data that change frequently; use properties for data that do not change or change slowly.

Example

Adding a new property to user records.

```
3N ADD PROP 5003 ◀
Property Type (S)? ◀
Property Name? Birthday ◀
Property Description? User's birthday in
MM/DD/YY format ◀
Property Length? 8 ◀
Property Format (String)? ◀
Adding Property 503 ...
Property 503 added.
Primary Property to add to? user ◀
Primary Property to add to? ◀
```

6

Command Reference

6-66

3N ADD SERVER

Adds a server to the 3+Name service.

Format

3N ADD SERVER [\\]name [:domain[:organization]]

Comment? *text*

Net Number? *netnum*

Ethernet Address? *netaddr*

3ShareInstalled? *share*

3MailInstalled? *mail*

3RouteInstalled? *route*

3BackupInstalled? *backup*

3RemoteInstalled? *remote*

3NetConnectInstalled? *connect*

3StartInstalled? *start*

Required Capability

Administrator

Parameters

name:domain:organization

The three-part name of the server you are adding to the 3+Name service. The name must be unique in the Name service. If you omit this parameter, the service prompts you for it.

text

Any string of characters not longer than 100 characters. To skip this prompt, press **[Return]**.

netnum

The number of the network on which the server is located. If the server is on your network, press **[Return]** to accept the displayed default, which is the number of your network. If the server is on another network, enter the number of that network.

To see your network number, use the 3N STATUS command. The number itself is assigned by 3Com to 3+Share server packages and is entered in the file 3NAME.NSP during installation. A network number is an eight-character sequence of digits (0 through 9) and the letters A through F.

netaddr

The network address of the new server. Each 3Com EtherLink board or 3Server has a unique address encoded in read-only memory. Use the 3N DIR command to see the address of an installed server. The network address is also on the server's EtherLink board. A network address is a 12-character sequence of digits (0 through 9) and the letters A through F.

share

Enter **Y** if the 3+Share File and Print services are installed on this server. Enter **[ESC]** otherwise.

mail

Enter **Y** if 3+Mail is installed on this server. Enter **[ESC]** otherwise.

route

Enter **Y** if 3+Route is installed on the server. Enter **[ESC]** otherwise.

backup

Enter **Y** if 3+Backup is installed on the server. Enter **[ESC]** otherwise.

<i>remote</i>	Enter Y if 3+Remote is installed on the server. Enter [ESC] otherwise.
<i>connect</i>	Enter Y if 3+NetConnect is installed on the server. Enter [ESC] otherwise.
<i>start</i>	Enter Y if 3+Start is installed on the server. Enter [ESC] otherwise

Remarks

The 3N ADD SERVER command adds a server to the 3+Name service. Normally, you do not need to add the names of servers that are on your network. When a server is started, it automatically adds an entry for itself to the Name service unless an entry already exists. To list entries in the Name service, see the 3N DIR command in the *3+Share User's Guide*.

If you use 3+Route or 3+Netconnect to communicate with other networks, you can add servers on the other networks to your 3+Name service. This allows users on your network to link to the shared directories and printers on the other networks' servers. You will need to exchange network numbers, names, and network addresses with other network administrators. You can use the 3N STATUS and 3N DIR commands to determine your network number and servers' network addresses, respectively.

Example

Adding a remote server to the 3+Name service.

```
3N ADD SERVER Sales:NorthWest ◀
Adding Server Sales:NorthWest:3Com ...
Comment? A server in the field with
dial-up access ◀
Net Number (00040004)? 00040009 ◀
Ethernet Address? 02608C00809E ◀
3ShareInstalled? [ESC] ◀
3MailInstalled? Y ◀
3RouteInstalled? Y ◀
3BackupInstalled? [ESC] ◀
3RemoteInstalled? [ESC] ◀
3NetConnectInstalled? [ESC] ◀
3StartInstalled? [ESC] ◀
Server Sales:NorthWest:3Com added.
```


3N ADD USER

Adds a new user to the 3+Name service.

Format

3N ADD USER name[:*domain*[:*organization*]]

Comment? *text*

CapabilityClass(U)? *capclass*

3ShareServer? *fileservers*

HomeDir? *homedir*

File server Drive? *drive*

3MailServer? *mailserver*

Required Capability

Administrator

Parameters

name:domain:organization

The three-part name of the user you are adding to the 3+Name service. The name must be unique in the Name service. If you omit this parameter, the service prompts you for it.

text

Any string of characters not longer than 100 characters. To skip this prompt, press **[Return]**.

capclass

The new user's capability class. To give the user administrator capability, enter **A**. For user (or normal) capability, enter **U** or press **[Return]**.

fileserver

The three-part name of the file server that will serve this user. The user's home directory is created on this file server. This file server is also the user's default print server.

You can omit this parameter by pressing **[Return]**, or **[Esc]** and **[Return]** if a default file server is displayed. If you omit this parameter, the user has no default file and print server, no home directory, and cannot use the 3+Share File and Print services. The next two prompts do not appear.

homedir

The name of the home directory that will be created for the user on the above-named server. The home directory name must be a valid DOS directory name of eight characters or fewer.

drive

The drive identifier of the server's drive on which you want the user's home directory created. The drive identifier must designate an existing shared disk drive on the user's file server. To find the available drives and the free space on each drive, use the 3F STAT command. For information on 3F STAT, see the *3+Share User's Guide*.

mailserver	The name of the new user's mail server. If you do not assign the user a mail server, he is unable to use the 3+Mail service. To assign no mail server, press [Esc] and then [Return] if a default mail server's name is displayed. If no default is displayed, press [Return] .
------------	--

Remarks

The 3N ADD USER command adds a user to the 3+Name service. You must add a user to the Name service before that user can log in and use the network.

In addition to entering the user in the 3+Name service, this command also creates a home directory for the user on the assigned file server, if any. The assigned file server is also the user's default server for 3+Share File and Print service operations. If the user is not assigned a file server, no home directory is created and the user cannot use the File and Print services.

Each user who is assigned a file server owns a unique home directory and all the files and directories below it. A user can always link to his own home directory. No user other than the owner can link to a home directory unless the owner shares it by using 3F SHARE command. Initially, the user's home directory is empty. After linking to it, the user can create files and directories using DOS commands and application programs.

You must name each user's home directory. You should establish a convention for naming users' home directories. One such convention is to name each home directory by the initials of the user's first and middle names and the first six characters of the user's last name. For example, user Fred T. Jones's home directory would be named FTJONES, and Mary B. Harrison's would be MBHARRIS.

If your network supports 3+Remote PC users who dial in to the network, you must add each of these users to the 3+Name service. If these users are already in the Name service because they also use the network locally, you do not need to add them again.

If you add a user to the Name service and specify a file or mail server that is not operational, the user cannot be added to the inoperative server. If this happens, an onscreen message asks if you want to add the user to the Name service even though the user cannot be added to the specified file or mail server. You can answer **N** (no) and try to add the user again later. You can answer **Y** (yes) and let the user be added to the Name service without adding the user to the specified file or mail server. If you answer **Y** (yes), you must modify the user entry with the 3N MOD command and delete the name of the inoperative file or mail server. You should never allow a user entry to specify a file or mail server to which the user is not yet successfully added.

Example

Adding a new user to the 3+Name service.

```

3N ADD USER Fred Jones <|
Adding User Fred Jones:HQ:3Com ...
Comment? Factory sales support engineer <|
CapabilityClass(U)? <|
3ShareServer? finance <|
HomeDir? fjones <|
File server Drive? c: <|
3MailServer? corporate <|
User Fred Jones:HQ:3Com added.
Adding Fred Jones:HQ:3Com to Share Server
Finance:HQ:3Com ...
Adding Fred Jones:HQ:3Com to Mail server
Corporate:HQ:3Com ...

```

6

Command Reference

6-76

3N DEL

Deletes a user, group, or server from the 3+Name service.

Format

3N DEL[ETE] [\\]name[:domain[:organization]] [/NP]

Required Capability

Administrator

Parameters

name:domain:organization

The three-part name of the user, group, or server you want to delete from the 3+Name service. If you omit this parameter, the service prompts you for it.

NP Suppresses the request for verification.

Remarks

The 3N DEL command deletes users, groups, and servers from the 3+Name service. The service prompts you to verify the deletion before it is performed unless you include the NP parameter.



NOTE: Whenever you delete an entry from the 3+Name service, you should also delete any aliases for that entry, using the 3N DEL ALIAS command.

The following restrictions and considerations apply to the various types of entries you can delete with this command.

Deleting Users

Before you can delete a user from the 3+Name service, the user's home directory must be empty and the user must have no undelivered mail. If the user's home directory is not empty or the user has undelivered mail, you must first log in as that user and delete the contents of the home directory and any undelivered mail. If you do not know the user's password, first use the 3N MOD command to delete the user's password. You can then log in as that user without supplying a password.

Use the DOS DEL and RMDIR commands to delete files and directories, respectively, from the user's home directory; see the DOS manual for more information. For information on deleting a user's undelivered mail, see the 3M DELM command earlier in this chapter.

Deleting Groups

There are no restrictions on deleting groups. You do not need to delete the members from a group before you delete the group.

Deleting Servers

You need to delete a server from the 3+Name service only if the server is removed from the network. If an entry exists in the Name service for a remote server, you need to delete the entry if that remote server is removed from its network.

Before you remove a server from the network and delete it from the Name service, copy any files you want to save to diskettes, tape, or another server. If any users have home directories on that server, you need to assign those users to another file server and likewise move the contents of their home directories. For more information on changing a user's default file server, see the 3N MOD command later in this chapter. If the server provided 3+Mail service to any users, you will need to reassign those users to another mail server. For information on such reassignments, see the 3N MOD command later in this chapter.

Always perform a proper shutdown of all services on a server before turning off power to the server. For instructions on shutting down services, see the 3F, 3P, and 3N SHUTDOWN commands in this chapter.

Examples

Example 1: Deleting a user from the 3+Name service.

```
3N DEL fred jones 
Delete User Fred Jones:HQ:3Com [Y/N]? y 
User Fred Jones:HQ:3Com deleted.
```

Example 2: Deleting a group from the 3+Name service.

```
3N DELETE sales 
Delete Group sales:HQ:3Com [Y/N]? y 
Group sales:HQ:3Com deleted.
```

Example 3: Deleting a remote server from the 3+Name service.

```
3N DEL sales:northwest ↵  
Delete Server Sales:NorthWest:3Com [Y/N]? y ↵  
Server Sales:NorthWest:3Com deleted.
```

Example 4: Changing your mind while deleting a user.

```
3N DELETE fred jones ↵  
Delete User Fred Jones:HQ:3Com [Y/N]? n ↵  
*** Cancelled.
```

Example 5: Deleting a user without the request for verification.

```
3N DEL fred jones /NP ↵  
User Fred Jones:HQ:3Com deleted.
```

3N DEL ALIAS

Deletes an alias from the 3+Name service.

Format

3N DEL[ETE] ALIAS [\\]name[:domain[:organization]] [/NP]

Required Capability

Administrator

Parameters

name:domain:organization

The three-part name of the alias you want to delete from the 3+Name service. If you omit this parameter, the service prompts you for it.

NP

Suppresses the request for verification.

Remarks

The 3N DEL ALIAS command deletes an alias from the 3+Name service. Unless you include the NP parameter on the command line, you must verify the deletion before it takes place.

You cannot make changes to an existing alias. To change an alias, you must first delete the alias, then add a new one using 3N ADD ALIAS. Deleting an alias from the Name service does not delete the user entry for which the alias stands.

When you delete a user, you must also delete any alias associated with the user's name.

Examples

Example 1: Deleting an alias from the 3+Name service.

```
3N DEL ALIAS freddy ↵  
Delete Alias freddy:HQ:3Com [Y/N]? y ↵  
Alias freddy:HQ:3Com deleted.
```

Example 2: Deleting an alias without verification.

```
3N DEL ALIAS freddy /NP ↵  
Alias freddy:HQ:3COM deleted.
```

3N DEL DOMAIN

Deletes a domain and all associated entries from the 3+Name service.

Format

3N DEL[ETE] DOMAIN *domain[:organization]* [/NP]

Required Capability

Administrator

Parameters

domain:organization

The name of the domain you want to delete from the 3+Name service. If you omit this parameter, the service prompts you for it.

NP

Suppresses the request for verification.

Remarks

The 3N DEL DOMAIN command deletes a domain and all entries within the domain from the 3+Name service. If the domain you are deleting is the last domain in an organization, the organization is also deleted.



CAUTION: Deleting a domain also deletes all entries in the 3+Name service that belong to the domain. Use this command carefully as you can accidentally delete a great many entries, such as users. Moreover, adding the domain again does not retrieve the lost entries. Before you delete a domain, use the 3N DIR command to see if it contains any entries. For information on the 3N DIR command, see the *3+Share User's Guide*.

If an alias exists for the domain, delete it using the 3N DEL ALIAS command.

Example

Deleting a domain from the 3+Name service.

```
3N DEL DOMAIN old-domain <—  
Delete Domain old-domain:3Com [Y/N]? y <—  
Domain old-domain:3Com deleted.
```

3N DEL MEMBER

Deletes a member from a group in the 3+Name service.

Format

3N DEL[ETE] MEMBER [\\]*name1*[:*domain*[:*organization*]] [/NP]

Group Name? [\\]*name2*[:*domain*[:*organization*]]

Required Capability

Administrator

Parameters

name1:domain:organization

The three-part name of the member you want to delete from the specified group. If you omit this parameter, the service prompts you for it.

name2:domain:organization

The three-part name of the group from which you want to delete the member.

NP Suppresses the request for verification.

Remarks

The 3N DEL MEMBER command deletes a member from a group. Use this command to remove members from distribution lists.

Example

Deleting a member from a group.

```
3N DEL MEMBER fred jones ↵
Group Name? sales ↵
Delete Member Fred Jones:HQ:3Com from
sales:HQ:3Com [Y/N]? y ↵
Member Fred Jones:HQ:3Com deleted.
```


3N DEL PROP

Deletes an existing property, or field, from an entry's record in the 3+Name service.

Format

3N DEL PROP *propname* | *propnum* [/NP]

Required Capability

Administrator

Parameters

propname

The name of the property you want to delete. You can also specify the property by its property number.

propnum

The number of the property you want to delete. This is the number that was assigned to the property when it was added to the 3+Name service.

NP

Suppresses the request for verification before deleting the specified property.

Remarks

You should only delete user-defined properties.



CAUTION: Deleting predefined properties causes network applications to fail.

Example

Deleting a property by number without verification.

```
3N DEL PROP 5003 /NP ←  
Property 5003 deleted.
```

3N DIR PROP

Displays the properties that have been added to the 3+Name service.

Format

3N DIR PROP [*propnum* | *propname*]

Required Capability

Administrator

Parameters

propnum

The number of the property you are displaying. This parameter is optional; if you do not specify a particular property number or name, all properties in the 3+Name service are displayed.

propname

The name of the property you are displaying. This parameter is optional; if you do not specify a particular property name or number, all properties in the Name service are displayed.

Remarks

The 3N DIR PROP command allows you to list a specific property by number or name, or to list all the properties in the 3+Name service.

If you list a particular property, all fields for that property are listed. If you do not specify a particular property, the property number, type, and name are listed for all properties in the 3+Name service. Although only users with administrator capability can add, modify, or delete a property from the Name service, regular users can display a property or properties.

Examples

Example 1: Displaying a particular property.

```
3N DIR PROP 5008 ←  
Property Number:      5008  
Property Type:         Password  
Property Name:         Password  
Property Length:       2  
Property Description:   Hashed password  
Property Format:        CARDINAL
```

Example 2: Displaying all properties in the 3+Name service.

```
3N DIR PROP ←  
Finding Properties . . .  
Number: 204    Type: Secondary    Name: Address  
Number: 4      Type: Secondary    Name: addresslist  
Number: 3      Type: Group        Name: members  
Number: 100    Type: Primary      Name: User  
Number: 205    Type: Secondary    Name: Server
```

3N MOD

Modifies a user, group, or server entry in the 3+Name service.

Format

3N MOD[IFY] [*name[:domain[:organization]]*]

Required Capability

Administrator

Parameters

name:domain:organization

The three-part name of the user, group, or server entry you want to modify. If you omit this parameter, the service prompts you for it.

The 3+Name service determines the type of entry you want to modify by looking up its name. Each type of entry has its own set of additional parameters. The service prompts you for these additional parameters after the Name service has determined the type of entry you want to modify. Each set of additional parameters is described separately after the following general remarks.

General Remarks

The 3N MOD command modifies existing entries in the 3+Name service. You can modify users, groups, and servers with the 3N MOD command.

You are prompted for each parameter you can modify. Included in each prompt is the current value of the parameter, if any. To keep the current value, press **[Return]** in response to the prompt. To change the current value, enter a new value and press **[Return]**. To clear the current value without entering a new value, press **[Esc]** and then **[Return]**.

You can cancel the 3N MOD command by pressing **[Esc]** in response to a prompt for a parameter with no current or default value, or by pressing **[Esc]** twice in response to a prompt for a parameter with a current or default value. (The first time clears the current value and the second time cancels the 3N MOD command.)

Modifying Users

Parameters

Comment?

To keep the current comment, press **[Return]**. To change the comment, enter a new comment and press **[Return]**. To erase the comment without entering a new comment, press **[Esc]** and then **[Return]**. A comment can be any string of 100 characters or fewer.

Password?

To keep the current password, press **[Return]**. The current password is not displayed. Only the user can modify his own password. With administrator capability, however, you can delete the user's password by pressing **[Esc]** and then **[Return]**.

CapabilityClass?

To keep the displayed capability class, press **[Return]**. To change the user's capability class, enter the new capability class and press **[Return]**. Enter **U** for normal capability. Enter **A** for administrator capability.

3MailServer?

The three-part name of the user's mail server. If the 3+Mail service is not installed on the network, this prompt is not displayed.

If your network uses 3+Mail, you can respond to this prompt in one of the following ways. Press **[Return]** to keep the current mail server (or none if none is currently assigned). Press **[Esc]** and then **[Return]** to delete the current Mail Server assignment, provided the user has no undelivered mail. If there is no mail server currently assigned, specify a mail server by entering the server's three-part name and pressing **[Return]**. You cannot change from one mail server to another in a single operation. Instead, you must delete the current mail server assignment, and then use 3N MOD again to specify the new mail server.

3ShareServer?

The three-part name of the user's file server, if any. Press **[Return]** to accept the current file server assignment (or none if none is currently assigned). Press **[Esc]** and then **[Return]** to delete the current file server assignment. The user's home directory must be empty before you can delete the file server assignment. If there is no currently assigned file server, you can specify a new server by entering its name and pressing **[Return]**. If you specify a new server, the service will prompt you for the following two parameters.

HomeDir?

The name of the user's home directory. This prompt appears only if you specified a new file server in response to the *3ShareServer?* prompt. The user's home directory is created with the name you supply here. The name you supply must be a valid DOS directory name of eight characters or fewer.

File server Drive

The disk drive on which the user's home directory is to be created. You are prompted for this parameter only if you specified a new file server in response to the *3ShareServer?* prompt. You must supply a drive identifier for a shared hard disk on the assigned file server.

Remarks

You cannot modify a user's password with the 3N MOD command, but you can delete the password altogether. This is useful whenever you need to log on as a particular user and you do not know that user's password. You can use the 3N MOD command to delete the user's password, and then you can log in as that user without supplying a password. Only a user can modify or assign his own password. For more information, see the *3+Share User's Guide*.

You cannot change a user's file server in a single operation. To change a user's file server, you must use the 3N MOD command twice: once to delete the old file server, and the second time to add the new file server. For complete instructions, see the section "Moving Users" in Chapter 5.

You cannot change a user's mail server in a single operation. If you want to change a user's mail server, you must use the 3N MOD command twice: once to delete the old mail server, and the second time to add the new mail server. You must clear any undelivered mail before removing a 3+Mail server.

Modifying Groups

Parameters

Comment?

To keep the current comment, press **[Return]**. To change the comment, enter the new comment and press **[Return]**. To clear the current comment without entering a new comment, press **[Esc]** and then **[Return]**. A comment can be any string of 100 characters or fewer.

Remarks

Using the 3N MOD command, you can only modify a group's comments. To change the members of a group, you must use the 3N ADD MEMBER and 3N DEL MEMBER commands.

Modifying Servers

Parameters

Comment?

To keep the current comment, press **[Return]**. To change the comment, enter the new comment and press **[Return]**. To clear the current comment without entering a new comment, press **[Esc]** and then **[Return]**. A comment can be any string of 100 characters or fewer.

Net Number?

The number of the network to which the server is connected. To accept the current value, press **[Return]**. To change the network number, enter the new network number and press **[Return]**.

Use the 3N STATUS command to see your network number. The number itself is assigned by 3Com to 3+Share server packages and is entered in the file 3NAME.NSP during installation. A network number is an eight-character sequence of digits (0 through 9) and the letters A through F.

Ethernet Address? The network address of the server. To keep the current value, press **[Return]**. To change the address, enter the new address and press **[Return]**.

Each 3Com EtherLink board or 3Server has a unique network address encoded in read-only memory. Use the 3N DIR command to see the address of a server installed on your network. See the EtherLink board for the network address on an uninstalled server. A network address is a 12-character sequence of digits (0 through 9) and the letters A through F.

3ShareInstalled? Press **[Return]** to keep the current answer. Enter **Y** or **[ESC]** to cancel the default.

3MailInstalled? Press **[Return]** to keep the current answer. Enter **Y** or **[ESC]** to cancel the default.

3RouteInstalled? Press **[Return]** to keep the current answer. Enter **Y** or **[ESC]** to cancel the default.

3BackupInstalled? Press **[Return]** to keep the current answer. Enter **Y** or **[ESC]** to cancel the default.

3RemoteInstalled? Press **[Return]** to keep the current answer. Enter **Y** or **[ESC]** to cancel the default.

3StartInstalled?

Press **[Return]** to keep the current answer. Enter **Y** or **[ESC]** to change the answer.

3NetConnectInstalled?

Press **[Return]** to keep the current answer. Enter **Y** or **[ESC]** to change the answer.

Remarks

Use this 3N MOD command to correct errors made when adding a remote server to the 3+Name service with the 3N ADD SERVER command. For example, if you entered a remote server's network address incorrectly, you can use this command to enter the correct address.

Entries for servers on your own network need to be modified if a service is added or removed.

Examples

Example 1: Deleting a user's password.

```
3N MOD fred jones ␣
Looking for fred jones:HQ:3Com ...
Comment (Factory sales support engineer)? ␣
Password (*****)? [Esc] ␣
CapabilityClass (U)? ␣
3ShareServer (Finance:HQ:3Com)? ␣
3MailServer (Corporate:HQ:3Com)? ␣
User Fred Jones:HQ:3Com modified.
```

Example 2: Modifying a group.

```
3N MOD sales ◀
Looking for sales:HQ:3Com ...
Comment (List of salesmen)? List of sales
people at HQ ◀
Group sales:HQ:3Com modified.
```

Example 3: Modifying a remote server.

```
3N MOD sales:northwest ◀
Looking for sales:northwest:3Com ...
Comment (A server in the field with dial-up
access)? ◀
Password?
Net Number (00040009)? ◀
Ethernet Address (02608C479800)? 02608C478900 ◀
3ShareInstalled (Y)? [ESC] ◀
3MailInstalled (Y)? ◀
3RouteInstalled (Y)? ◀
3BackupInstalled (Y)? [ESC] ◀
3RemoteInstalled (Y)? [ESC] ◀
3StartInstalled (Y)? [ESC] ◀
3NetConnectInstalled (Y)? [ESC] ◀
Server Sales:NorthWest:3Com modified.
```

Example 4: Modifying a server on your network to add 3+Mail service.

```
3N MOD corporate ↵
Looking for Corporate:HQ:3Com
Comment (3Server next to Joe's desk.)? ↵
Password?
Net Number (00040010)? ↵
Ethernet Address (02608C483200)? ↵
3ShareInstalled (Yes)? [ESC] ↵
3MailInstalled (Yes)? ↵
3RouteInstalled (Yes)? ↵
3BackupInstalled (Yes)? [ESC] ↵
3RemoteInstalled (Yes)? [ESC] ↵
3StartInstalled (Yes)? [ESC] ↵
3NetConnectInstalled (Yes)? [ESC] ↵
Server CORPORATE:HQ:3COM Modified
```

3N MOD DOMAIN

Modifies a domain in the 3+Name service.

Format

3N MOD[IFY] DOMAIN *domain[:organization]*

Net Number? *netnum*

Required Capability

Administrator

Parameters

domain:organization

The name of the domain you want to modify. If you omit this parameter, the service prompts you for it.

netnum

The number of the network on which the domain is located. To accept the current value, press **[Return]**. To change the network number, enter the new number and press **[Return]**. A network number is an eight-character sequence of digits (0 through 9) and the letters A through F.

Remarks

When you modify a domain, you cannot change its name. You can change its network number only. You will want to do this if a domain moves from one network to another, or to correct a network number that you entered incorrectly.

If you are using the 3+Route or 3+Netconnect service to communicate with other networks, you need to update the configuration information when you modify a remote domain. For more information on managing remote domains, see Chapter 5 of this guide. For information on changing the 3+Route configuration, see the *3+ Installation and Configuration Guide*.

Example

Modifying a domain.

```
3N MOD DOMAIN ◀  
Domain Name? northwest ◀  
Net Number (00040009)? 400 ◀  
Domain Northwest:3Com modified.
```


3N MOD PROP

Modifies a property in the 3+Name service.

Format

3N MOD[IFY] PROP *propnum* | *propname*

PropertyName? *propname*

PropertyDescription? *text*

PropertyLength? *proplen*

PropertyFormat (String)? *propformat*

Required Capability

Administrator

Parameters

propnum

The number of the property you want to modify. A property with the specified number must exist. You can also specify the property by name.

propname

When specified on the command line, this is the name of the property you want to modify. In response to the **PropertyName?** prompt, you can specify a new property name. When using the 3N ADD command to add an entry with this property to the 3+Name service, the property name is used as the prompt for this property or field. A property name is at most 20 characters long.

<i>text</i>	Any string of text 132 characters or fewer.
<i>proplen</i>	The length of the property or field you are adding. The maximum length of a property is 256.
<i>propformat</i>	The format of the property. The default is string. Other formats will not function from the user interface. Press [Return] in response to this prompt.

Remarks

The 3N MOD PROP command allows you to modify a property's name, description, and length.



CAUTION: Modifying predefined properties causes network applications to fail. You should only modify a user-defined property.

Example

Modifying a property.

```
3N MOD PROP 5003 ◀  
PropertyName (Birthday)? ◀  
PropertyDescription? Date of birth in  
mm/dd/yy format ◀  
PropertyLength (8)? ◀  
PropertyFormat (S)? ◀  
Property 5003 modified.
```

3N SET

Sets the 3+Name service's time and date.

Format

3N SET [/TIME=*hh:mm[:ss]*] [/DATE=*mm-dd-yy*]

Required Capability

Administrator

Parameters

hh:mm:ss

The current local time specified in a 24-hour notation in which *hh* is the hour, *mm* the minutes, and *ss* the seconds. The seconds are optional. Thus, 1:00 A.M. becomes 1 and 1:00 P.M. becomes 13. Leading zeros are not required.

mm-dd-yy

The current date in month, day, and year format. Thus, *mm* is the month (1 for January through 12 for December), *dd* the day of the month, *yy* the last two digits of the year (1986 is 86, for example). Leading zeros are not required.

Remarks

Although the 3N SET command is both a user command and an administrator command, the discussion here is limited to capabilities reserved for administrators. For a discussion of the 3N SET command capabilities available to all users, see the *3+Share User's Guide*.

The 3N SET command sets the 3+Name service's time and date. It has the same effect as using the DOS TIME and DATE commands at the Name service server. The 3N SET command's main function is to set the Name service's time and date, either from a workstation or when the Name service server is a 3Server.

The time and date may be changed for any server on the network by using 3N SET and answering the prompts.

Examples

Example 1: Setting the time and date.

```
3N SET /TIME=12:08 /DATE=1-18-86 <—
```

Example 2: Setting the time and date, using prompted mode.

```
3N SET ? <—  
Server Name? Finance <—  
Domain Name? hq <—  
Organization Name? 3com <—  
Time? 08:47 <—  
Date? 06-11-86 <—  
Set complete
```

3N SHUTDOWN

Shuts down the 3+Name service.

Format

3N SHUTDOWN [/NP]

Required Capability

Administrator

Parameters

NP

Suppresses the request for verification.

Remarks

The 3N SHUTDOWN command stops the 3+Name service. Using this command is the only correct way to stop the Name service. As the last step before turning off power to the network, use the 3N SHUTDOWN command. All other services on all servers must be shut down before you use the 3N SHUTDOWN command.

When stopping network operations, shut down the network one server at a time, ending with the Name service server. To restart network operations, always start the Name service server first. You can start any remaining servers in any order.

For information on shutting down the 3+Share File and Print services, see the 3F SHUTDOWN and 3P SHUTDOWN commands in this chapter.

Example

Shutting down the 3+Name service.

```
3N SHUTDOWN ↵
```

```
Shutdown the Name service [Y/N]? y ↵
```

```
The Name service is shutdown.
```

3P DEL

Deletes a spool file from a print queue.

Format

3P DEL[ETE] [*prnid*] /SPOOL=*spoolid*|*|ALL [/NP]

Required Capability

Administrator

Parameters

prnid

One of the following four printer identifiers: PRN:, LPT1:, LPT2:, or LPT3:. PRN: is the same as LPT1:. One of these four identifiers will correspond to the printer whose queue contains the spool file you want to delete. You must have previously linked a printer to the specified printer identifier using the 3P LINK command. If you omit this parameter, the default is the printer identifier PRN:.

spoolid

A number that identifies the spool file you want to delete. The spoolid is assigned by the 3+Print service when a spool file is added to a print queue. Use the 3P QSTAT command to determine a spool file's spoolid. For information on the 3P QSTAT command, see the *3+Share User's Guide*.

*

Specifies all spool files in the printer's queue that belong to you. Using this in place of spoolid deletes all your spool files from the queue, including the currently printing spool file if it is yours also.

ALL	Specifies all spool files. Using this in place of spoolid deletes all spool files from the queue. This option deletes the whole queue including the file currently printing.
NP	Suppresses the request for verification.

Remarks

The 3P DEL command deletes the specified spool file, or all spool files, from the print queue. This command is also available to users. Users can delete their own spool files only; administrators can delete any and all spool files from the print queue. For information on using this command as a user, see the *3+Share User's Guide*.

You can use the 3P DEL command to delete the currently printing spool file. The printing of the spool file stops and the message "CANCELLED BY OPERATOR" is printed. The spool file is then deleted and printing continues with the next spool file in the queue.

Before you can use the 3P DEL command, you must link to the printer whose queue contains the file(s) you want to delete. Use the 3P LINK command to link a printer identifier to the printer. For information on using the 3P LINK command, see the *3+Share User's Guide*.

Examples

Example 1: Deleting a single file from a print queue.

```
3P DEL lpt2: /SPOOL=23 
Are you sure [Y/N]? y 
/SPOOL=23 deleted from
\\FINANCE:HQ:3COM\LASERJET.
```

Example 2: Deleting an entire print queue.

```
3P DEL prn: /SPOOL=ALL 
Are you sure [Y/N]? y 
/SPOOL=ALL deleted from
\\FINANCE:HQ:3COM\EPSON.
```

Example 3: Deleting a single file from print queue using a prompted mode.

```
3P DEL ? 
Printer Id (PRN:)? 
Spool ID? 6 
Are you sure [Y/N]? y 
/Spool=6 deleted from
\\FINANCE:HQ:3COM\LASERJET.
```

6

Command Reference

6-112

3P MOD

Modifies a printer's password.

Format

3P MOD[IFY] *printername* /PASS=*pass*

Required Capability

Server-user

Parameters

printername

The name of the printer whose password you want to modify. This is the name assigned to the printer via the 3P SHARE command.

pass

The new password you want to assign to this printer. If a password is assigned to the printer, a user must supply the password when linking to the printer. If the pass parameter is left blank, then no password is assigned and none is required for linking.

Remarks

The 3P MOD command modifies a printer's password. You can use the command to add a password, change a password, or delete a password. This command does not affect any existing links to the printer.

You can use the 3P MOD command to modify passwords for only those printers attached to the server for which you are logged in as the server-user. To modify passwords on printers attached to another server, you must log in as the server-user for that server.

Examples

Example 1: Changing or assigning a password.

```
3P MOD laserjet /PASS=newpass ↵  
\\FINANCE:HQ:3COM\LASERJET modified.
```

Example 2: Deleting a password.

```
3P MOD laserjet /PASS= ↵  
\\FINANCE:HQ:3COM\LASERJET modified.
```

Example 3: Changing or assigning a password in prompted mode.

```
3P MOD ? ↵  
Printer Sharename? laserjet ↵  
New Password (*****)? newpass ↵  
\\FINANCE:HQ:3COM\LASERJET modified.
```

Example 4: Deleting a password in prompted mode.

```
3P MOD ? ↵  
Printer Sharename? laserjet ↵  
New Password (*****)? [Esc] ↵  
\\FINANCE:HQ:3COM\LASERJET modified.
```

3P MOVQ

Moves one printer's queue to the end of another printer's queue.

Format

3P MOVQ *prnid1* [*prnid2*]

Required Capability

Administrator

Parameters

prnid1

One of the following four printer identifiers: PRN:, LPT1:, LPT2:, or LPT3:. PRN: is the same as LPT1:. This parameter specifies the printer whose queue you want to move. You must have linked a printer to the specified printer identifier.

prnid2

One of the following four printer identifiers: PRN:, LPT1:, LPT2:, or LPT3:. PRN: is the same as LPT1:. This parameter specifies the printer to receive the queue. You must have linked a printer to the specified printer identifier, and the linked printer must be attached to the same server as the printer specified in the *prnid1* parameter. That is, both printers must be on the same server. If you omit this parameter, the default is PRN:.

Remarks

The 3P MOVQ command moves the queue of spool files waiting to be printed on the printer specified in the *prnid1* parameter to the queue of the printer specified in the *prnid2* parameter. You can move queues only between two printers attached to the same server.

If a spool file is printing on the first printer, that spool file continues printing and is not moved with the rest of the queue.

Before you can use the 3P MOVQ command, you must have linked both printer identifiers, *prnid1* and *prnid2*, to printers (on the same server). For more information on linking to printers, see the description of the 3P LINK command in the *3+Share User's Guide*.

Examples

Example 1: Moving a print queue.

```
3P MOVQ lpt3: lpt1: ◀
```

Queue moved from \\FINANCE:HQ:3COM\EPSON to
\\FINANCE:HQ:3COM\LASERJET.

Example 2: Moving a print queue using a prompted mode:

```
3P MOVQ ? ◀
```

```
Printer Id (PRN:)? ◀
```

```
Printer Id (PRN:)? lpt2: ◀
```

Queue moved from \\Finance:HQ:3Com\LASERJET
\\Finance:HQ:3com\EPSON.

3P RESUME

Resumes printing on the specified printer.

Format

```
3P RESUME [prnid | printername] [/NEW] [/FORM=formnum]
                                     [/FF[=OFF]]
                                     [/BANNER[=OFF]]
```

Required Capability

Administrator or server-user

Parameters

prnid

One of the following four printer identifiers: PRN:, LPT1:, LPT2:, or LPT3:. PRN: is the same as LPT1:. This parameter specifies the printer on which you want to resume printing (or linking). The specified printer identifier must have been linked to a printer with the 3P LINK command. If you omit this parameter, the default is PRN:.

printername

The name of the printer as assigned with the 3P SHARE command. If you are unable to link to the printer, you can use the server-user form of this command; specify the printer by name, and allow printing and linking to resume. To use this form of the 3P RESUME command, you must be logged in as the server-user for the server to which the printer is attached.

NEW	Enables others to establish new links to the specified printer. NEW is required only if new links were disabled with the 3P STOP NEW command. Always include this keyword when you use the server-user form of the 3P RESUME command.
<i>formnum</i>	Specifies the type of form in the printer. A form number is any number from 1 through 99. If you omit this, the printer's form number remains unchanged.
FF	Causes a page eject after each spool file is printed. If you use this keyword with the =OFF keyword, no page eject is performed between the printing of spool files. If you omit this keyword, page eject remains as last set.
BANNER	Causes a banner page to be printed at the beginning of each spool file if the owner is different from the owner of the spool file printed before. If you use this keyword with the =OFF keyword, no banner pages are printed. If you omit this keyword, the printing of banner pages remains unchanged.

Remarks

The 3P RESUME command performs the following:

- ▶ Starts a printer that was stopped with the 3P STOP command
- ▶ Permits new links to a printer whose links were disabled with the 3P STOP NEW command
- ▶ Allows or disallows page ejects between print jobs, via the FF option
- ▶ Allows or disallows the printing of a banner page at the beginning of each print job, via the BANNER option
- ▶ Specifies the type of form in the printer, via the FORM=*formnum* option.

If printing was stopped, it restarts with the file that was interrupted. The entire file will be printed regardless of where printing stopped.

If new links were prevented with the 3P STOP NEW command, you must remain linked to the printer until you enable new links, using the 3P RESUME NEW command. Should you unlink from the printer, you must use the server-user form of the 3P RESUME command to enable links to the printer again.

The 3P SET and 3P RESUME commands with the FORM=*formnum* option control the type of form on which a spool file is printed. Every spool file is also assigned a form number, either explicitly with the 3P SET command or implicitly by default. The default form number for spool files is one (1). A spool file will not print unless the printer is assigned the same form number as the spool file.

A printer's initial form number is set during installation. After installation, use the 3P RESUME command to set a printer's form number. Once set, a printer's form number stays set until another 3P RESUME command changes it or the server is restarted. Restarting a server reinstates all the form numbers assigned to the attached printers during installation.

By using the 3P SET, 3P STOP (to stop printing while you change forms), and 3P RESUME commands, you can ensure that each file is printed on the correct form. This requires that your organization establish a correspondence between form numbers (the numbers 1 through 99) and actual forms. You can assign the numbers to forms any way you prefer with one restriction: The default form number for spool files is one. You should make one (1) the form number of the most common form, typically plain paper.

By using the FF and the BANNER options, you can control how individual spool files are separated when printed. The FF option turns page ejects between spool files on (FF) and off (FF=OFF). The BANNER option is specified in the same manner as the FF option and controls the printing of a banner page at the beginning of each spool file. Even with BANNER on, a banner page is printed at the beginning of a spool only if the owner of that spool file is different from the owner of the previously printed spool file and the printer has not paused between printing jobs for the same owner.

The initial setting (**on** or **off**) of both the FF and BANNER options is established during installation. Once changed by the 3P RESUME command, the new setting remains until the server is restarted. When a server is restarted, the settings are reset to the values specified during installation.

You can use the 3P STAT command to see a printer's current form number, FF setting, and BANNER setting. For complete information on the 3P STAT command, see the *3+Share User's Guide*.

You must have linked a printer to the specified printer identifier (or the default PRN:) before you can use the 3P RESUME command. Use the 3P LINK command to link to a printer; see the *3+Share User's Guide* for information on the 3P LINK command. With the server-user form of the 3P RESUME command (in which you specify the printer by name), you do not need to be linked to the printer.

Examples

Example 1: Restarting the default printer.

```
3P RESUME ◀  
PRN: resumed.
```

Example 2: Permitting new links to a printer.

```
3P RESUME lpt1: /NEW ◀  
\\FINANCE:HQ:3COM\LASERJET resumed.
```

Example 3: Permitting new links to a printer, using a prompted mode.

```
3P RESUME ? ◀  
Printer Id (PRN:)? lpt2: ◀  
Allow New Links [Y/N]? y ◀  
Form Number? ◀  
Form Feeds [ON/OFF]? ◀  
Banners [ON/OFF]? ◀  
\\FINANCE:HQ:3COM\EPSON resumed.
```

Example 4: Restarting a printer with invoices, form number 9, and disabling the printing of banner pages.

```
3P RESUME lpt2: /FORM=9 /BANNER=OFF ◀  
\\FINANCE:HQ:3COM\EPSON resumed.
```

Example 5: Permitting new links to a printer to which links were disabled with the 3PSTOP command.

```
3P RESUME Printer1 /NEW <—  
\\FINANCE:HQ:3COM\LASERJET resumed.
```

Example 6: Permitting new links to a printer to which you cannot link.



NOTE: You must be logged in as the server-user to perform this from of the 3P RESUME command.

```
3P RESUME ? <—  
Printer Sharename? epson <—  
Printer Id (PRN:)? lpt2:<—  
Allow New Links [Y/N]? y <—  
Form Number? <—  
Form Feeds [ON/OFF]? <—  
Banners [ON/OFF]? <—  
\\FINANCE:HQ:3COM\EPSON resumed.
```

6

Command Reference

6-124

3P SET

Sets spool file options.

Format

```
3P SET [prnid] /SPOOL=spoolid | * | ALL [/HOLD=[OFF]]
                                           [/COPIES=copies]
                                           [/PRI=priority]
                                           [/DEFER=[OFF]]
                                           [/RELEASE]
                                           [/FORM=formnum]
```

Required Capability

Administrator

Parameters

prnid

One of the following four printer identifiers: PRN:, LPT1:, LPT2:, or LPT3:. PRN: is the same as LPT1:. This parameter specifies the printer whose queue contains the spool file(s) you want to set. The specified printer identifier must have been linked to a printer via the 3P LINK command. If you omit this parameter, the default is PRN:.

hold

Holds the printing of all jobs sent to the printer until you issue either the 3P UNLINK command or the 3P SET HOLD=OFF command.

copies

The number of copies to print of the specified spool file. The range is 1 through 99. The default is 1.

<i>priority</i>	The priority of the specified spool file in the queue. The spool file with the highest priority prints next. Spool files with the same priority print on first-come-first-served basis. The range is 1 through 99; 99 is the highest priority and prints first. The default is 50.
<i>DEFER</i>	Defers printing of the specified spool file until you release the spool file, using the 3P SET command and either the RELEASE or DEFER=OFF option.
<i>RELEASE</i>	Releases the specified spool file for printing. RELEASE is the same as DEFER=OFF.
<i>formnum</i>	Specifies the form required when printing the spool file. The spool file will not print until you use the 3P RESUME command to assign the printer the same formnum. The range of formnum is 1 through 99. The default is 1.
<i>spoolid</i>	Specifies an individual spool file. To determine the spoolid of a spool file, use the 3P QSTAT command. <i>Spoolid</i> is a number that the 3+Share Print service assigns to a spool file when that file is added to the queue.
<i>*</i>	Specifies all of your spool files in the queue for the specified printer.
<i>ALL</i>	Specifies all spool files, yours and everyone else's, in the queue for the specified printer.

Remarks

The 3P SET command sets various options for spool files. The command is a user command with additional capabilities for the administrator. These remarks describe the differences only. For a complete description of the capabilities the 3P SET command provides to any user, see the *3+Share User's Guide*.

A user can use the 3P SET command on his own spool files only. An administrator can use the 3P SET command on any spool files regardless of who owns those file(s). An administrator can also use the 3P SET command on all spool files in a given queue at once by specifying ALL in the /SPOOL= parameter. Otherwise, the 3P SET command is the same for administrators and users.

Examples

Example 1: Deferring an entire queue from printing.

```
3P SET lpt2: /SPOOL=ALL /DEFER   
/SPOOL=ALL for \\FINANCE:HQ:3COM\EPSON set.
```

Example 2: Releasing an entire queue for printing.

```
3P SET lpt2: /SPOOL=ALL /RELEASE   
/SPOOL=ALL for \\FINANCE:HQ:3COM\EPSON set.
```

Example 3: Assigning a form number to a spool file.

```
3P SET prn: /SPOOL=23 /FORM=5   
/SPOOL=23 for \\FINANCE:HQ:3COM\LASERJET set.
```

Example 4: Changing the priority of a print job in prompted mode.

```
3P SET ?   
Printer ID (PRN:)?   
Hold [ON/OFF]?   
Copies?   
Priority? 99   
Defer [ON/OFF]?   
Form Number?   
Spool ID? 32   
/SPOOL=32 for \\FINANCE:HQ:3COM\LASERJET set.
```

3P SHARE

Assigns a name to a printer and shares it on the network.

Format

3P SHARE *printername*=*portid* [/PASS=*pass*]

Required Capability

Server-user

Parameters

printername

The name you assign to the printer. This is the name users will specify when they want to link to this printer. A printer name is eight characters or fewer. The name can be composed of letters (A through Z and a through z), digits (0 through 9), the special characters \$&#@!%"()-{}_ , and the international characters supported by the IBM PC.

portid

The printer you are sharing, identified here by the port to which it is attached on the server. The printer port, and thus the printer identifier you should specify above, is determined when the printer is installed. For serial printers, the range of *portid* is COM1: through COM*n*:, where *n* is the number of serial ports on the server. For parallel printers, *portid* is LPT1: or LPT2:.

pass

The password you assign to this printer, if any. Users must supply any such password before they can link to the printer. If you do not assign a password, any user can link to the printer. A printer password can be eight characters or fewer. The allowed characters are: letters (A through Z and a through z), digits (0 through 9), the characters `$&#@!%()-{}_`, and the international characters supported by the IBM PC.

Remarks

The 3P SHARE command assigns a name to a printer and shares it on the network. You can only share printers that are connected to the server for which you are logged in as the server-user. If you want to share a printer on another server, you must first log in as the server-user for that server.

It is important to note that *portid* in this command refers to a particular physical printer port on the server and is not a logical device identifier to which you must link an actual device (as is the *pnid* parameter). The actual port to which a printer is connected, and thus the port identifier you specify in the 3P SHARE command, is determined at the time the printer is installed.

Examples

Example 1: Sharing a printer with no password.

```
3P SHARE laserjet=lpt2: <|  
\\FINANCE:HQ:3COM\LASERJET shared.
```

Example 2: Sharing a printer with a password.

```
3P SHARE epson=com1: /PASS=qtuv <|  
\\FINANCE:HQ:3COM\EPSON shared.
```

Example 3: Sharing a printer with no password using a prompted mode.

```
3P SHARE ? <|  
Printer Sharename? laserjet <|  
Printer ID? prn: <|  
Password? <|  
\\FINANCE:HQ:3COM\LASERJET shared.
```

6

Command Reference

6-132

3P SHUTDOWN

Shuts down the 3+Share File and Print services on the specified server.

Format

3P SHUTDOWN [*server*] [/NEW] [/NP]

Required Capability

Administrator

Parameters

<i>server</i>	The three-part name of the server whose 3+Share File and Print services you want to shut down. If you omit this parameter, the default is your file server.
NEW	Prevents new links to the shared directories and printers on the specified (or default) server. Users with existing links to the shared directories and printers on the specified server can continue to establish new links. This option does not shut down the services or break existing links.
NP	Suppresses the request for verification.

Remarks

The 3P SHUTDOWN command stops the 3+Share File and Print services on a server. It is the same as the 3F SHUTDOWN command described earlier in this chapter. Using either of these commands is the only correct way to stop the File and Print services on a server. Use the 3P SHUTDOWN command whenever you need to stop network operations.

The 3+Name service should always be the last service you shut down. Shut down the network one server at a time, ending with the Name service server. To restart network operations, you must restart each server. Always restart the Name service server first, then restart any remaining servers in any order.

Using the 3P SHUTDOWN command with the NEW option does not shut down the File and Print services; the command just prevents new users from establishing new links. Typically, this form of the 3P SHUTDOWN command is used before a full network shutdown, preventing new links while giving users time to finish work in progress before you shut down the network altogether.

Examples

Example 1: Shutting down the 3+Share File and Print services on a server.

```
3P SHUTDOWN \\server1 ↵  
Shutdown File and Print Server on  
\\FINANCE:HQ:3COM [Y/N]? y ↵  
\\FINANCE:HQ:3COM shutdown.
```

Example 2: Preventing new links to a server.

```
3P SHUTDOWN \\finance /NEW /NP ↵  
New links to \\FINANCE:HQ:3COM disabled.
```


3P STOP

Stops any printing on the specified printer.

Format

3P STOP [*prnid*] [/LINK] [/NEW]

Required Capability

Administrator

Parameters

<i>prnid</i>	One of the following four printer identifiers: PRN:, LPT1:, LPT2:, or LPT3:. PRN: is the same as LPT1:. This parameter specifies the printer you want to stop. The specified printer identifier must have been linked to a printer with the 3P LINK command. If you omit this parameter, the default is PRN:.
<i>LINK</i>	Breaks any existing links to the printer. Users can still establish new links to the printer. Printing of the spool files continues.
<i>NEW</i>	Prevents new links to the specified printer. It does not break any existing links to the printer. Printing of the spool files continues.
	To enable new links to the printer again, use the 3P RESUME command with the NEW option.

Remarks

The 3P STOP command allows you to stop printing on the specified printer. The file that was printing is returned to the beginning of the queue, as though it had not started printing. When printing is resumed with the 3P RESUME command, that file will print first from the beginning, regardless of where printing stopped. Users can link to a printer that has been stopped with the 3P STOP command, but no files will print until printing is started with the 3P RESUME command.

A typical use of the 3P STOP command is to stop printing while you change the paper or ribbon. Printing restarts when you issue the 3P RESUME command.

The LINK option breaks all existing links to the printer, including your link. Using the 3P STOP command with the LINK option does not stop the printing of spool files on the printer, and users can still establish new links to the printer. The user software is not informed of the broken links, and therefore errors, such as **NET804** and **NET805**, will occur if the user software attempts to use the broken links. To correct the errors, restart the user's workstation.

The NEW option prevents new links to the printer. Existing links to the printer are not affected. Use this form of the command before taking a printer out of network service; you can prevent users from establishing new links to the printer while allowing users with existing links to finish up in an orderly fashion before you remove the printer from network use altogether.

To enable new links to the printer again, use the 3P RESUME command with the NEW option.

You can use the NEW and LINK options together. This form of the 3P STOP command breaks all links to the printer, including your link, and prevents users from linking to the printer. If you stop a printer and are unable to link to it, you must use the server-user form of the 3P RESUME command to restart the printer. For more information, see the 3P RESUME command earlier in this chapter.

Before you can use the 3P STOP command in any form, you must have linked the specified (or default) printer identifier to a printer by using the 3P LINK command. For information on the 3P LINK command, see the *3+Share User's Guide*.

Examples

Example 1: Stopping a printer from printing.

```
3P STOP lpt1: <—  
\\FINANCE:HQ:3COM\LASERJET stopped.
```

Example 2: Breaking all existing links to the default printer.

```
3P STOP /LINK <—  
\\FINANCE:HQ:3COM\LASERJET stopped.
```

Example 3: Preventing new links to a printer, using a prompted mode.

```
3P STOP ? <—  
Printer Id (PRN:)? <—  
Disallow New Links [Y/N]?y <—  
Unlink Links [Y/N]?n <—  
\\FINANCE:HQ:3COM\LASERJET stopped.
```

6

Command Reference

6-138

3P UNLINK

Unlinks a user from the shared directories and printers on the specified server.

Format

3P UNLINK *user* [*server*]

Required Capability

Administrator

Parameters

<i>user</i>	The three-part name of the user you want to unlink.
<i>server</i>	The three-part name of the server from which the user is to be unlinked. If you do not specify a server, the user is unlinked from your default file server.

Remarks

Although the 3P UNLINK command is both a user and an administrator command, these remarks concern the capabilities reserved for administrators. For a complete discussion of capabilities available to all users, see the *3+Share User's Guide*.

The 3P UNLINK command breaks any links the specified user has with the shared directories and printers on the specified server. If you do not specify the server, the user is unlinked from your default file server. The user software is not informed of the broken links, and this command therefore causes problems with that user software. To correct the situation, restart the user's workstation.

Example

Unlinking a user from your default file server.

```
3P UNLINK \\fred jones ←  
CAUTION: Unlinks both 3F and 3P links!  
Unlink \\Fred Jones:HQ:3Com from  
\\Finance:HQ:3Com [Y/N]? Y ←  
\\Fred Jones:HQ:3Com unlinked from  
\\Finance:HQ:3Com.
```

3P UNSHARE

Deletes a printer's name from the network and makes the printer unavailable for shared use.

Format

3P UNSHARE *printername*

Required Capability

Server-user

Parameters

printername

The name of the printer you want to remove from network use. This is the name you assigned to the printer via the 3P SHARE command. Using this command requires the specified printer not be linked to by any users and that the printer not be printing.

Remarks

The 3P UNSHARE command makes a printer unavailable for shared use on the network and deletes the printer's name from the 3+Share Print service.

Use the 3P UNSHARE command whenever you need to remove a printer from the network. For example, if a printer breaks, remove the printer from the network logically with the 3P UNSHARE command before you physically disconnect the printer from its server. Once it is repaired, you can connect the printer to its server again by using the 3P SHARE command to assign it a sharename and make it available for network use.

The printer you specify in a 3P UNSHARE command cannot be in use. No user can be linked to the printer, and the printer cannot be printing. Use the 3P STOP command to ensure both these conditions. Additionally, the printer's print queue should be empty. You can use the 3P MOVQ command to move any spool files to another print queue, or you can use the 3P DEL command to delete any spool files.

Before you can use the 3P UNSHARE command, you must be logged in as the server-user for the server to which the printer is connected.

Example

Removing a printer from the network logically.

```
3P UNSHARE laserjet ←  
FINANCE:HQ:3COM\LASERJET unshared.
```


3S CREATE

Creates a 3+Start volume.

Format

3S CREATE *volname* [/access] [/PASS=*pass*] [/FROM=*parameter1*]
[/TO=*parameter2*]
[/DESC="*description*"]

Parameters

access

The type of access rights you want to assign to the 3+Start volume. You can assign one of the following access types:

PRIV

Private - only one user can link to the volume at a time. A password is required.

PUB

Public - multiple users can link to the volume simultaneously. No password is required.

pass

The password you are assigning to the 3+Start volume, if any. All users must supply any such password to link to the volume. If you assign (PRIV) access to the volume, you must assign a password.

parameter1

The location from which the 3+Start volume will be created. Valid entries are A: through C:, where C: is either a hard disk or a 3+Share directory linked to C:. If a diskette is used, it must have a size of 360KB. The default value of /FROM is drive A:.

parameter2	The drive on which the 3+Start volume is to be created. Valid entries are A: through Z:. Ensure that there is a 3+Start volume directory linked to the drive specified in the /TO= parameter. The default value for /TO is the current drive. In this case, the 3+Start volume directory should be linked to the current drive.
<i>"description"</i>	A brief description (maximum 40 characters) of the 3+Start volume you are creating. The description displays only when someone uses the 3S DIR command to view a directory of volumes. When entering the 3S CREATE command without prompts, enclose the description in quotes. If you use the prompted mode of 3S CREATE, quotes are not required.

Remarks

Use the 3S CREATE command to format and register a new 3+Start volume. Leave one space between parameters on the same line.

If you do not specify the /TO= parameter, ensure that your current drive is linked to a 3+Start volume directory.

Public start volumes can be accessed by multiple users simultaneously and can optionally be assigned a password.

Private start volumes can be accessed by one user at a time and must have a password.



NOTE: After you have entered the 3S CREATE command, the screen will display a message warning users of possible copyright infringement. It is your responsibility to comply with the software license agreements for all applications on the network.

Examples

Example 1. Creating a public start volume from a diskette in drive A:.

```
3S CREATE pubstart /FROM=a:
/DESC="Public Start Volume" ◀
```

```
WARNING:      The DOS software license requires
               that you have a version of DOS
               for each personal computer on
               your network.
```

```
Continue? (Y/N): Y ◀
```

```
Copying 720 sectors from A: to pubstart
```

```
.....
```

```
.....
```

```
...
```

Example 2. Creating a private start volume, using a prompted mode.

```
3S CREATE ? ↵
Volume Name? mystart ↵
Password? mine ↵
Access? priv ↵
From? a: ↵
Description? My private start volume. ↵
```

Copying 720 sectors from A: to mystart

```
.....
.....
...
```

3S DEL

Deletes a 3+Start volume.

Format

3S DEL[ETE] *volname* [/NP]

Parameters

<i>volname</i>	The name of the 3+Start volume you are deleting.
NP	Suppresses the request for verification.

Remarks

The 3S DEL command deletes the specified 3+Start volume from the start server and removes it from the start directory.



CAUTION: Use the 3S DEL command to delete a 3+Start volume from the 3S prompt (**3S>**) rather than from DOS. If you delete a 3+Start volume from DOS, the volume will not be deleted from the start directory until the server is restarted.

Examples

Example 1. Deleting a start volume.

```
3S DEL yourstart ↵  
Are you sure? (Y/N) Y ↵
```

Example 2. Deleting a start volume using a prompted mode.

```
3S> DEL ?   
Volume Name? mystart   
Are you sure? (Y/N) y 
```

3S DIR

Lists information about 3+Start volumes.

Format

3S DIR [*volname*] [/LINK]

Parameters

volname

The name of the 3+Start volume for which you are requesting a directory. If you do not specify this parameter, information concerning all 3+Start volumes will be displayed.

LINK

Displays information concerning all users currently linked to the specified volume, and their respective network addresses.

Remarks

You must be linked to the directory containing the 3+Start volumes before issuing the 3S DIR command.

Use the LINK parameter to see the network addresses of users linked to individual 3+Start volumes. Then you can use the address information to unlink individual users from a 3+Start volume via the 3S UNLINK command.

Examples

Example 1: Listing the number of users linked to a specified volume and providing other information about the volume.

```
3S DIR pubvol ←  
Volume Name: PUBVOL      Access Type: PRIVATE   Password: YES  
Volume Size: 361KB       Number of users linked: 1  
Creator: Admin:HQ:3Com  
Description: Public Start Volume
```

Example 2: Listing information for all start volumes.

```
3S DIR ←  
Volume Name: PUBVOL      Access Type: PRIVATE   Password: YES  
Volume Size: 361KB       Number of users linked: 4  
Creator: Admin:HQ:3Com  
Description: PUBLIC START VOLUME  
  
Volume Name: JOHND       Access Type: PRIVATE   Password: YES  
Volume Size: 361KB       Number of users linked: 0  
Creator: Admin:HQ:3Com  
Description: JOHN DOE'S VOLUME  
  
Volume Name: FREDJ       Access Type: PRIVATE   Password: YES  
Volume Size: 361KB       Number of users linked: 1  
Creator: Admin:HQ:3Com  
Description: FRED JONES' START VOLUME
```

Total of 4 3+Start volumes on the 3+Start service.

Example 3: Listing all users linked to a specified volume and their respective network addresses.

```
3S DIR pubvol /LINK ←  
3+Start volume PUBVOL:  
User 1: 02608C283953  
User 2: 02608C293847  
User 302608C183045
```

6

Command Reference

6-152

3S LINK

Links a 3+Start volume to drive C:.

Format

3S LINK *volname* [/PASS=] [/NP]

Parameters

<i>volname</i>	The name of the start volume to which you are linking.
PASS	The 3+Start volume password, if any.
NP	Suppresses the request for verification.

Remarks

The 3S LINK command establishes a link between a 3+Start volume on the start directory and the drive identifier C:.

A link exists automatically when you start your workstation using 3+Start and specify a start volume name. If you wish to link to a start volume without restarting your workstation, you must first use the 3S LINK command to link the volume to drive C:.

Examples

Example 1. Linking a start volume with no prompts.

```
3S LINK tester /pass=secret /np ←
```

Example 2. Linking a start volume, using a prompted mode.

```
3S LINK ? ←  
Volume name? tester ←  
Password? secret ←
```

3S MODIFY

Modifies a 3+Start volume's password, access type, and/or description.

Format

```
3S MOD[IFY] startvol [/PASS=pass] [/access]
                               [/DESC="description"]
```

Parameters

startvol

The name of the start volume you are modifying.

pass

The new password you want to assign.

If you change the access rights to private (**PRIV**), you must supply a password.

If you do not include **/PASS=** in your command, the password will remain unchanged. If you include **/PASS=** but omit the password from the parameter, this command will delete the current password.

access

The new access rights you want to assign to the start volume. You can assign one of the following access types:

PRIV

Private - only one user can link to the volume at a time. A password is required for private access.

PUB Public - multiple users can link to the volume simultaneously. No password is required.

If you omit this parameter, its value will remain unchanged.

"description"

A brief description (maximum 40 characters) of a particular 3+Start volume. The description displays only when someone uses the 3S DIR command to view a directory of volumes. When entering the 3S MOD command without prompts, enclose the description in quotes. If you use the prompted mode of 3S MOD, quotes are optional. If you omit this parameter, the value will remain unchanged.

Remarks

A volume must be unlinked before it can be modified. In the prompted mode, press **[Return]** if you want to keep the current value. To delete a value, press **[Esc]** and then **[Return]** after you enter a new value.

Examples

Example 1: Modifying a start volume's password.

```
3S MOD mystart /PASS=newpass ←
```

Example 2: Modifying a start volume's access.

```
3S MOD mystart /PUB ←
```

Example 3: Modifying a start volume's description, using a prompted mode.

```
3S MOD ? ◀  
Volume Name? mystart ◀  
Password? ◀  
Access? ◀  
Description? Carey's Start Volume ◀
```

3S UNLINK

Unlinks a 3+Start volume from drive C:. Can also be used to unlink a specific user from a 3+Start volume by specifying the user's network address.

Format

3S UNLINK [*volname*] [/addr=*net address* | *]

Parameters

<i>volname</i>	The name of the start volume you are unlinking. If you omit this parameter, 3+Start will unlink the start volume currently linked to drive C:.
<i>net address</i>	The user's network address. Specify this parameter to unlink a specific user from a 3+Start volume.
*	Unlinks all users from the specified 3+Start volume.

Remarks

Using the 3S UNLINK command makes a drive identifier available to link to another directory. If you use the *addr=* parameter, you must enter the volume name. To unlink other users, you must have administrator capability.

Always inform the user that you plan to unlink him from the network before you actually do so, since that user may be transferring data, copying files, saving a data file within an application package, and so forth.

Examples

Example 1: Unlinking a start volume as a user would.

```
3S UNLINK ←┐
```

Example 2: Unlinking all users from a volume.

```
3S UNLINK pubstart /ADDR=* ←┐
```

Example 3: Unlinking the user whose network address is
"02608c032793".

```
3S UNLINK pubstart /ADDR=02608c032793 ←┐
```

Chapter 7: Glossary

This glossary defines terms used in this guide.

Access rights	Attributes you assign to a sharename to control how users access the directory through that sharename.
Administrator	A network user who has been assigned administrator capability (capability class A).
Alias	Another name for an item entered in the Name service. Aliases are typically nicknames for users. Aliases must be specified as three-part names when three-part names are required.
Concurrent server	A personal computer equipped with both 3+Share server software and 3+Share user software. A concurrent server can function simultaneously as a network server and a user workstation.

Concurrent user	A user who is working at a server equipped with both user and server software.
Directory	A named, logical grouping of entries for other directories and files. Network users can share directories.
Domain	A category within an organization; generally a geographical location. Domains are the middle part of the three-part name that uniquely identifies an item on the network.
Drive identifier	A single letter followed by a colon (A: through Z:) to which you link a directory. The 3+Share default values are A: through G:. This default range can be increased or decreased using the DOS LASTDRIVE= statement in the CONFIG.SYS file.



NOTE: The limit you set must be reflected in the MSREDIR command line in the AUTOEXEC.BAT or 3PLUS_ON.BAT file with the L parameter as well as in the CONFIG.SYS file.

File service	The software that manages the sharing of directories, files, and disk space on the network.
First-level directory	A directory that is immediately under a server's hard-disk root directory. First-level directories can be shared only by the server-user.

Group	A collection of named entries. Groups are typically collections of users on 3+Mail distribution lists.
Hexadecimal	A base-16 number system that uses the digits 0 through 9 and the letters A through F. Letters A through F represent numbers 10 through 15 (base 10), respectively.
Home directory	A directory created for each network user by 3+Share when that user is added to the Name service. The home directory stores user-created files. General users and administrators have home directories; server-users do not.
Initial user	A user who is created by 3+Share at installation so that 3+Share services can be set up and users can be added to the Name service. The initial user is called Admin.
Linking	Creating a logical connection between a shared directory or printer on a file server and a drive identifier or printer identifier on your personal computer.
Member	An entry within a group.
Modem	A device that connects a server or personal computer to a telephone line.
Name service	The software that stores the names of, and information about, users and servers.

Network	Two or more personal computers that are physically connected to allow communication and the sharing of resources.
Network address	A 12-digit hexadecimal number that uniquely identifies a workstation or server on a network.
Network number	A hexadecimal number assigned to each 3+Share package that uniquely identifies each network. A network can have many 3+Share servers, but only use one network number, usually the one assigned to the first 3+Share package installed.
Organization	The general category to which a named item on the network belongs. An organization is usually the name of the company where the network resides. You specify an organization as the third part of a three-part name.
Output device	A device such as a printer that is attached to a workstation or server and to which the workstation or server sends information.
Password	A string of characters that you can assign to your user name or a sharename to control who can access your files. Passwords for user names can be twelve characters or fewer. Passwords for sharenames can be eight characters or fewer.

Path	The directory parameter that you specify to get from your current directory or a drive's root directory to another directory or file in the DOS directory structure .
Port identifier	A name you use in the 3P SHARE command to tell the Print service the physical port to which a printer is attached. Port identifiers are specified as LPT1:, LPT2:, or LPT3: for parallel printers, or COM1: through COM5: for serial printers.
Printer identifier	One of the following names, to which you link a shared printer: PRN: or LPT1:, LPT2:, or LPT3:.
Print queue	An ordered list of files waiting to be printed.
Print service	The software that manages the network's printers and print queues.
Printer sharename	The name a server-user gives a printer when he shares the printer by using the 3P SHARE command. Users specify a printer sharename when they link to a printer.
Server	A personal computer or 3Server equipped with 3+ server software. A server manages shared resources on the network.

Server-user	A network user who logs in to the network using the name of a server to perform certain functions, such as making printers available to the network.
Share list	A collection of the sharenames of directories and printers for the respective server. The File and Print services use the share list during a link procedure to access those shared resources. The data base SHRLIST is kept in the \3PLUS subdirectory and contains this information.
Shared directory	A directory that can be used by other users. Directories are made shareable with the 3F SHARE command.
Shared printer	A printer that can be accessed by the network users. A printer is shared by the server-user using the 3P SHARE command.
Sharename	The name you give a directory when you share the directory. You also specify a sharename to link to someone else's directory.
Spool file	A temporary file on the shared printer's server that stores a file sent for printing.
Spool ID	The identification number of a file while it is in the print queue.
Subdirectory	Any directory that is below another directory in the DOS hierarchical file structure.

Three-part name	The name by which the Name service identifies a named part of the network, such as a user or server. Three-part names are divided by colons (:), have the form Name:Domain:Organization, and are limited to 40:20:20 characters, respectively.
3+Share	Server and user software for the 3+ network that consists of the File and Print services.
Unlinking	Breaking a logical connection between a shared directory and a drive identifier, or between a shared printer and a printer identifier.
Users (general)	Users who use network resources but do not manage the network. Users are assigned the capability class U.
Workstation	A personal computer connected to the network and equipped with user software.

Appendix A: Error Messages

This appendix is divided into three sections:

- ▶ 3+ error messages
- ▶ DOS error messages
- ▶ 3+Route and Remote status messages

If you encounter a message not listed in this appendix, check the 3+ *Installation and Configuration Guide* and/or the 3+ *Share User's Guide*.

3+ Error Messages

This section lists all 3+ Name, File, Print, Remote, Route, and Mail error messages alphabetically, provides an explanation of each message, and recommends recovery action. These error messages usually appear on the screen in the following format:

*****Error message**

3+Mail profile file (3MAIL.NSP) cannot be found.

Meaning	The file 3MAIL.NSP could not be found or is corrupted.
Action	Reinstall the 3+Mail software. For information, see the <i>3+ Installation and Configuration Guide</i> .

3+Name service unavailable.

Meaning	The Name service must be running on the network before you can run the 3+Mail server.
Action	Start the Name service and then restart the 3+Mail server software.

3Route/3Remote profile has been corrupted, please reconfigure.

Meaning	The profile file has been corrupted by disk errors, accidental deletion, or copy.
Action	Restart the server and reconfigure the service.

3Start server does not respond (does it exist?).

Meaning The server is not running, or 3+Start service does not exist on the server.

Action Make sure the server is running, then retry the operation.

Access denied.

Meaning Executing the requested command would violate the access rights of the file, subdirectory, or device involved. For example, you may have tried to write to a file marked read-only, or read a file marked write-only.

Action Check the access rights for the file.



NOTE: If you get this message and are not attempting an access operation, see your network supplier for assistance.

Attachment already exists.

Meaning	A message in the user's INBOX directory has the same message number as an attachment file that 3+Mail is trying to retrieve from the server.
Action	Use the DOS DIR command to view the user's INBOX directory. Look for the highest numbered attachment file. This is the file whose number matches the new attachment that 3+Mail is trying to retrieve. Using DOS, either rename the user's file or copy it to a different directory and then delete it from the INBOX directory. Run 3+Mail again and retrieve the message and attachment.

Attachment name too big!

Meaning	A user sent a message with an attachment file whose name is too long for 3+Mail.
Action	Use the 3M DEL1M command to delete the first message and attachment waiting to be delivered to the user. For details on the use of 3M commands, see Chapter 6. Have the user retrieve his messages.

Cannot register the volume.

Meaning	The maximum number of start volumes allowed on the server has been reached.
Action	Increase the number of start volumes parameter on your server, using the 3STACK command (in the server's \3PLUS\3CONFIG file). If you have reached the maximum limit of 128, delete some of the start volumes. You cannot install 3+Start on another server; only one 3+Start service is allowed per network.

Can't open 3Route/3Remote profile.

Meaning	The 3Route or 3Remote profile file is missing.
Action	Restart the server and reconfigure the service. For information, see the <i>3+ Installation and Configuration Guide</i> .

CIOSYS not installed yet.

Meaning	This version of 3+Route/Remote uses the concurrent input/output system (CIOSYS), which has not been run yet.
Action	Reinstall. For information, see the <i>3+ Installation and Configuration Guide</i> .

Communications Error.

Meaning	3+Mail is having difficulty completing a connection between a remote user and a server. This could be caused many ways: the server's modem does not answer or is busy; the server's modem answers but disconnects; there is noise on the telephone line; the remote user's modem is not connected to the PC or is not turned on; the modem has disconnected after several minutes of transmission.
Action	Retry the operation. Check the phone number. Check the modem for correct configuration (see the <i>3+Installation and Configuration Guide</i>). Make sure the modem is properly connected to the PC and is turned on. If the problem persists, try setting the modem to a lower baud rate.

CONTINUOUS CIOSYS CRITICAL ERROR - HALTING!!!

Meaning	One or more of the network drives has a problem. For example, it might be turned off, unplugged, or damaged.
Action	Make sure the drive is on-line. If it is, run DOS diagnostics (e.g., CHKDSK) to find the problem.

Copy protection failure.

Meaning	3+Route/Remote has not been correctly installed or has been corrupted.
Action	Restart the server; if the problem persists, deinstall and reinstall the service. For information, see the <i>3+ Installation and Configuration Guide</i> .

Directory name too big.

Meaning	A three-part user name is too long.
Action	The three-part name must be within the limit of 58 characters. For information, see the "Three-Part Name Syntax" section in Chapter 4.

Domain name too big.

Meaning	The domain portion of a three-part user name is too long.
Action	The domain name must be within the 20-character limit. For information, see the "Three-Part Name Syntax" section in Chapter 4.

DOS version must be 3.0 or later to run 3S.

Meaning	The DOS with which you started your computer is not the 3.0 version or a subsequent version.
Action	Restart the system with DOS 3.0 or a more recent version.

Duplicate entry in server mailbox directory (MBXS file).

Meaning	A user name has been entered twice in the mailbox directory file, MBXS, on the mail server. The user therefore has two Mail server INBOX numbers.
Action	Shut down the 3+Mail server, following the instructions in Chapter 5. Restart the server in DOS mode. Follow these steps to delete the duplicate entry: 1. Change directories to \3PLUS\3MAIL. <code>C>CD \3plus\3mail ←</code> 2. Copy the file MBXS to a file named MBXS.BAC. <code>C>COPY mbxs mbxs.bac ←</code> 3. Use a text editor to display the contents of the file MBXS. The first line contains the date and time. Following lines contain a number followed by a user name. Look for two lines that have the same user name. (Case does not matter. John Doe is the same as john doe.) Delete either duplicate line. 4. Exit the text editor, saving the changes. 5. Restart the server. 6. Log in as the administrator and use the 3N MOD command twice to delete and add mail service for the user whose mailbox reference you deleted from the MBXS file. For information on using the 3N MOD command, see Chapter 6 .

Duplicate parameters.

Meaning	3+Start has interpreted two or more values on a command line on which only one can exist. You may have incorrectly specified an optional parameter by forgetting the / mark that must precede it, or entering the same parameter twice.
Action	Make sure you have entered the correct parameters for a particular command line, you have spelled the parameters and commands correctly, and you have used correct punctuation.

End of List (no more volumes to return).

Meaning	No 3+Start volume exists on the server, or no users are linked to the 3+Start volume.
Action	No action required. This is a status message.

Error <number>.

Meaning	An internal error has occurred.
Action	Write down the error number and a description of the operation you were attempting when the error message appeared. Contact your network supplier.

Error in Name Service: No mail server address.

Meaning	The 3+Mail server's address is not present in the Name service.
Action	Enter the mail server in the Name service database, using 3N MOD SERVER. See Chapter 6 for information.

Error in server mailbox directory (MBXS file).

Meaning	The 3+Mail server's mailbox directory file, MBXS, contains a format or content error.
Action	Shut down the 3+Mail server, following the instructions in Chapter 5. Restart the server in DOS mode.

Use a text editor to look at the contents of the MBXS file. This file is in the \3PLUS\3MAIL directory. The first line contains the date and time. Following lines contain a number followed by a user name. Make sure that the largest number shown does not exceed the maximum number of mail users you specified when installing 3+Mail (see the *3+Installation and Configuration Guide*.) If a number exceeds the maximum allowed, run the 3INSTALL program to increase that maximum.

Make sure that each line in the MBXS file follows the format of: a number, a blank space, and a three-part user name. Correct any errors, using the text editor.

Check that no two users listed in the MBXS file have the same number preceding their name. If this occurs, delete one of the duplicate lines; exit the text editor, saving the changes; restart the server; and use the 3N MOD command twice, first to delete and then to add mail service for the user whose entry you deleted from the MBXS file.

Error reading sector 0 of <filename>.

Meaning	The 3+Start Master diskette cannot be read. Either that diskette is damaged or your disk drive is not working correctly.
Action	Create a new 3+Start Master diskette, or try to install the diskette using a different personal computer or disk drive.

Error writing the 3+Start header to <filename>.

Meaning	The 3+Start diskette cannot be copied onto the disk due to a disk error on the server.
Action	Retry the operation. If the message appears again, check the server's hard disk for bad sectors.

File (IBMBIO.COM, or IBMDOS.COM, or COMMAND.COM) is missing.

Meaning	Your formatted 3+Start Master diskette does not contain the DOS system file(s) listed above. For a diskette to be bootable (as required by 3S CREATE command), it must contain the file(s) listed in this error message.
---------	--

Action	Format a blank diskette with DOS (using the /S option) to create the diskette with the required system files. Then recreate the 3+Start Master diskette.
--------	--

IDP call returns error.

Meaning	The IDP.SYS driver is required, or the current IDP.SYS drive is bad.
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Action	Make sure you have referenced the correct IDP.SYS driver in your CONFIG.SYS file.
--------	---

Incorrect character in a name.

Meaning	The name component of a three-part user or server name contains invalid characters.
---------	---

Action	Valid characters are A-Z, a-z, 0-9, spaces, hyphens (-), periods (.), and international characters. For more information, refer to the "Three-Part Name Syntax" section in Chapter 4.
--------	---

Incorrect Date Field.

Meaning	The next message waiting for the user has an incorrect date field.
Action	Use the 3M DEL1M command to delete the message from the user's inbox on the 3+Mail server. For information on using 3M commands, see Chapter 6. Have the user retrieve his mail.

Insufficient space on Server.

Meaning	The server does not have enough room to create the 3+Start volume.
Action	Create more disk space on the server by: ▶ Deleting some volumes and/or files; or ▶ Moving users to another server; or ▶ Moving files to another server.

For information on creating disk space, see Chapter 5.

Mail error <number>.

Meaning	An internal error has occurred.
Action	Retry the operation. Shut down the 3+Mail server, following instructions in Chapter 5; then restart it. Make sure that the 3+Mail user software and the 3+Mail server software have the same version numbers. Use the 3M DEL1M command to delete the first message waiting to be delivered to the user (see Chapter 6). If the problem persists, reinstall the 3+Mail server software, following instructions in the <i>3+Installation and Configuration Guide</i> .

Mail server error <number>.

Meaning	An internal error has occurred.
Action	See action for Mail error <number> , above.

Mail Server Error 607.

Meaning	The 3+Mail server does not recognize the user specified in the TO: line of the message.
Action	Use the 3M DIRM command to verify this user's existence on the 3+Mail server. Then use the 3M DEL1M command using exactly the same name. For instructions on using 3M commands, see Chapter 6.

Mail server error retrieving messages. Press F8 to try again.

Meaning	The 3+Mail server failed or was restarted during the process of "local distribution" or "expansion." This message indicates that some mail may have been lost.
Action	This error only occurs when retrieving messages. Press function key F8 again to continue retrieving the next messages.

Mail server error. Wait two minutes and try again.

Meaning	A previous 3+Mail transaction between the workstation and server did not terminate correctly. This can happen in situations such as running out of space in your inbox.
Action	Within a minute or two, the server will timeout and clean up the transaction. The mail error will then disappear and you can continue to use 3+Mail for sending/retrieving.

Max Sharenames on Server.

Meaning	The server has assigned the maximum number of sharenames allowed by 3SHARE.
Action	Reconfigure 3SHARE using the 3INSTALL program and increase the number of sharenames allowed. Restart the server.

Maximum number of registered start volumes already exists.

Meaning	You have created the maximum number of 3+Start volumes allowed on your 3+Start server.
Action	▶ Delete unnecessary 3+Start volumes to make room for new ones; or ▶ Run the 3INSTALL program to increase the number of allowable volumes. Then shut down and restart the server, following instructions in Chapter 5. For information on the 3INSTALL program, see the <i>3+ Installation and Configuration Guide</i>.

Maximum users linked.

Meaning	The maximum number of users linked to the 3+Start volume has been reached.
Action	Increase the number of users allowed per 3+Start volume, using the 3STACK command to change the parameter in your \3PLUS\3CONFIG file. If you have reached the maximum limit, 128, create another start volume to accommodate additional users.

Message already exists.

Meaning	3+Mail is trying to retrieve a message whose number matches that of another message already in the user's INBOX directory.
Action	Use the DOS DIR command to view the user's INBOX directory and locate the highest numbered message. Using DOS, rename the message file or copy it to a different directory and then delete it from the INBOX directory.

Must supply a date field.

Meaning	3+Mail is having difficulty sending the next message.
Action	Retry the operation. If the problem persists, use the 3M DEL1M command to delete the first message waiting to be delivered to the user. For information on using 3M commands, see Chapter 6. Try to retrieve the user's mail again.

Name Service not responding...please try again.

Meaning	The 3+Name service server is not responding to requests.
Action	Make sure the Name service server is turned on and operating correctly. Make sure the network cabling is connected to the Name service server.

NET804: Network busy.

Meaning	The service is excessively busy, or someone has disconnected some part of the network.
Action	Unlink and relink, and try the command again. If this error persists, contact your dealer. Or, if the error was caused by issuing the 3F UNLINK \\username command specifying your own user name, use the 3F UNLINK command to unlink the drive IDs to which you had linked.

NET805: Network device no longer exists.

Meaning	The resource may no longer be shared on the network.
Action	Try relinking to that resource. If the problem persists, find out whether all the devices are on line.

NET807: Network adapter hardware error.

Meaning	There is a failure at the transport level, probably due to hardware problems.
Action	Run the diagnostic program provided with your network adapter. Make sure all cables are connected to your PC. If the problem persists, contact your network supplier.

NET808: Incorrect Response from Network.

Meaning	The workstation cannot complete the requested task.
Action	Restart the workstation and try the task again.

NET810: Unexpected Network error.

Meaning	The request contained invalid or incorrect information.
Action	Restart the workstation and try the task again.

NET812: Print queue full.

Meaning	The print queue is full.
Action	Make sure the printer is on-line and is printing spool files from the queue. Make sure the form type of the spool file matches that of the printer. If necessary, run the 3INSTALL program again and increase the number of print queue entries allowed.

NET813: Not enough space for print file.

Meaning	The disk used by 3+SHARE is full and has no room to spool print files.
Action	Delete any unnecessary files, and try the command again, or wait until some files have been printed. If necessary, move at least one user's home directory from the disk being used by 3+SHARE to another disk on the network. See Chapter 5 for information.

NET814: Print file was cancelled

Meaning	Either you specified an invalid spool file ID, or the spool file has been deleted.
Action	Check the spool file ID, and correct if necessary. Try again.

Network address incorrect or drive C: is not linked.

Meaning	You accidentally did one of the following: ▶ Tried to unlink drive C: when it was not linked. ▶ Entered a network address unrelated to the 3+Start volume.
Action	▶ Link the 3+Start volume first, then unlink it; or ▶ Check the network address and try to enter it again.

Network is busy (transmit/receive timed out).

Meaning	This is a network system error.
Action	Check for general network problems (see Appendix F). Then make sure that the network is up and running properly, and retry the operation.

Network retrying.....Press <Ctrl><Break> to stop.

Meaning	A timeout has occurred on the network. There may be a break in the cabling, or the server may be busy processing other requests.
Action	Wait. The retry will probably be successful and your operation will continue with no intervention. If the message remains on the screen and you wish to discontinue the retry process, press [Ctrl]+[Break].



CAUTION: Discontinuing the retry process in this manner will break links established with the network. You will receive NET804 and NET805 error messages and must relink to continue working.

Network software is in an invalid state.

Meaning	A 3+ program did not exit properly.
Action	Restart your workstation.

No appended directories.

Meaning	No directories have been appended through the APPEND command.
Action	Run the APPEND command before trying the task again.

No HOMEDIR.

Meaning	The user has never been given a home directory, or information about the user in the Name service is incorrect.
Action	Use the 3N DIR command to see if the user has a Share server entry. If not, add the name of the Share server, home directory, and drive ID, using the 3N MOD command. If a Share server entry exists, use the 3N MOD command to delete the entry. Then repeat the 3N MOD command and specify the Share server again, using the same home directory and drive ID as had been previously entered. None of the user's data will be lost.

No modification specified.

Meaning	You tried to modify a 3+Start volume without specifying the optional parameter that tells 3S what to modify.
Action	Try to modify the 3+Start volume again, changing one or more parameters. Use 3S MOD ? to enter the prompted mode.

No more space in the file system.

Meaning	The network has no available disk space.
Action	Delete any unnecessary files, and try again. Or add an expansion disk to the server. See Chapter 5 for information.

No more tree descriptors.

Meaning	You have reached the limit of sharenames.
Action	Run the 3INSTALL program to increase the maximum number of sharenames. See the <i>3+Installation and Configuration Guide</i> for information.

No such domain.

Meaning	The domain component of a three-part user name is invalid.
Action	Make sure you have spelled the domain name correctly. Then register the domain with the 3+Name service.

No such name.

Meaning	The name component of a three-part user name is not in the Name service data base.
Action	Make sure you have spelled the name correctly. Then register the name with the Name service.

No such organization.

Meaning	The organization component of a three-part user name is not in the Name service data base.
Action	Make sure you have spelled the organization name correctly. Then register the name with the Name service.

Not enough memory.

Meaning	The server does not have enough available memory to run 3+Mail.
Action	Even if the server has sufficient memory installed, other programs may be using memory. Restart the server, if necessary, remove programs you are not using, and restart 3+Mail.

Not enough memory to run this program.

Meaning	Your workstation does not have enough available memory to use the 3+Start program.
Action	3+Start uses 55K memory over DOS and the network system. Install additional memory in your workstation.

Not registered for Mail service.

Meaning	A user has been added to the Name service but has not been assigned a 3+Mail server.
Action	Assign a 3+Mail server to the user, using the 3N MOD command. For information on use of 3N commands, see Chapter 6.

Organization name too big.

Meaning	The organization component of a Name service user name is too long.
Action	The organization name must be within the 20-character limit. For information, see the "Three-Part Name Syntax" section in Chapter 4.

Parameter incorrect.

Meaning	The 3+Start service does not recognize the value you entered for an optional parameter. This can happen if: ▶ The parameter value (such as the 12-digit network address) was incorrect; or ▶ The name you assigned to a volume you were creating was too long. The volume name can only be 8 characters or fewer. It must be a legal DOS file name.
Action	▶ Enter the parameter value again, being very careful to type it correctly; or ▶ If you are assigning a name to a volume you are creating, select another name and restrict it to 8 characters or fewer.

Password incorrect. Password?

Meaning	The 3+Start password you entered is incorrect.
Action	Check the password and enter it again, being careful to type it correctly.

Read error attempting to access software on network drive.

Meaning	The installed 3SHARE file has become corrupted.
Action	Delete the file, and then reinstall the software using the original diskettes.

Server Error.

Meaning	An unexpected error has occurred in the server.
Action	Check the \3ROOT\STATUS.LOG file. If the problem persists, restart the server.

Server not responding...please try again.

Meaning	This message indicates the following possibilities: ▶ The server is busy. Users or servers currently sending/retrieving mail outnumber the processes defined in the 3+Mail parameter settings. ▶ The server is out of communication; this will clear within a minute or two. ▶ The 3+Mail server has been shut down or has failed. ▶ The number of files open is at the maximum allowed in the default server configuration.
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Action	Try the operation again. If the error persists, check the following: ▶ If all users on a 3+Mail server are receiving the message, make sure the server has not been shut down or taken off-line. ▶ If only some users on a 3+Mail server are receiving the message, you may need to increase the value of the MSPROCS parameter. Run the 3INSTALL program and increase the number of mail service processes allowed. For information, see the <i>3+ Installation and Configuration Guide</i>. ▶ If the message is appearing outside of the 3+Mail service, run the 3INSTALL program and reconfigure 3SHARE to increase the maximum number of open files allowed. For information, see the <i>3+ Installation and Configuration Guide</i>.
--------	--

Software version mismatch, error <number>.

Meaning	The version numbers of the programs do not match.
Action	Make sure you are using the correct versions of all 3+ programs. If the error reappears when you restart, write down the error number and notify your local authorized 3Com network supplier.

The number of entries in the server mailbox directory file (MBXS) exceeds the 3+Mail profile value.

Meaning	The MBXS file contains more entries than the MSMBXLIM profile value allows.
Action	Increase the value of MSMBXLIM in the Mail server profile. For information, see the <i>3+ Installation and Configuration Guide</i> .

The Server Mailbox directory file is missing.

Meaning	The mailbox directory file, MBXS, cannot be found.
Action	Shut down the 3+Mail server, following the instructions in Chapter 5. Restart the server in DOS mode. Follow these steps to recover the MBXS file: 1. Change directories to \3PLUS\3MAIL. <code>C>CD \3plus\3mail</code> ← 2. Copy the file MBXS.BAK to a file named MBXS. <code>C>COPY mbxs.bak mbxs</code> ←



NOTE: Each time you start the mail server, the current MBXS file is copied to MBXS.BAK as a safety precaution.

3. Restart the server.

NOTE: If **all** of the following are true, some of the mail not retrieved from the 3+Mail server may be misrouted:



- ▶ New users were added or existing users deleted from the Name service.
- ▶ Users that were added to or deleted from the Name service were assigned to the 3+Mail server from which the mailbox directory file was deleted.
- ▶ Users were added or deleted after the last date the 3+Mail server was started successfully.

If **all** of these are true, send a mail message to alert each user who could be affected by the problem. Mail is subject to misrouting only if it was in transit at the time the mailbox directory file was deleted.

The Name Service domain template, "ns_def.dom", is corrupt. Install the Name Service, according to manual instructions and restart.

Meaning	An error occurred when the service tried to read NS_DEF.DOM.
---------	--

Action	Reinstall the 3+Name service.
--------	-------------------------------

This diskette was not installed using the EtherLink card present in this PC.

Meaning	A server's copy-protected software can only be used with the network adapter that was in the machine when the software was installed.
---------	---

Action	Go back to the machine that has the network adapter for which the software was originally installed, and (re)install the software.
--------	--

Too many parameters ... ignored after (xxx).

Meaning	One of the parameters you typed is invalid.
---------	---

Action	Reissue the command, using valid parameters.
--------	--

Transmission failed.

Meaning	The network is down.
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Action	Check for loose cable connections, a break in the cable, or improper cabling configuration.
--------	---

Unable to create volume, name may already exist.

Meaning	You tried to create a 3+Start volume and assigned it a name that already exists, or there is a system error.
Action	Choose a different name for the 3+Start volume you want to create. The name you choose must be different from those listed in the 3+Start directory (3S DIR). If the error persists, check the \3ROOT\STATUS.LOG file on the server for more information and contact your 3Com network supplier for assistance.

Unable to open S_NAME.

Meaning	The server name file, S_NAME, was not found.
Action	Reinstall the 3+Mail service. See the <i>3+ Installation and Configuration Guide</i> for information.

Unable to Read a Volume.

Meaning	The 3+Start Master diskette cannot be read. Either the 3+Start Master diskette is damaged or your disk drive is not working correctly.
Action	Create a new 3+Start Master diskette or try to install the diskette using a different personal computer or disk drive.

Unable to Write to a Volume.

Meaning	The 3+Start diskette cannot be copied onto the disk due to a disk error on the server.
Action	Retry the operation. If the message appears again, check the server's hard disk for bad sectors.

Unavailable volume.

Meaning	You tried to link to a private 3+Start volume that was already linked. Even with administrator status, you cannot link to a private 3+Start volume that is in use. However, the administrator can unlink or delete a 3+Start volume, even if it is in use.
Action	Have the user of that volume unlink; then try to link to the volume again. Or, log in as Admin and use the 3S UNLINK command to unlink the volume.

Unknown Command.

Meaning	The 3+Start service does not recognize the command entered. You may have misspelled the 3S command.
Action	Check Chapter 6, Command Reference, to make sure the command exists and that you have spelled it correctly.

Unknown Parameter.

Meaning	The 3+Start service does not recognize the name of the optional parameter. You probably misspelled it.
Action	Check the Command Reference chapter to make sure that the parameter type you entered is in the correct format. Make sure you have entered the text and punctuation of the parameter correctly.

Unknown volume.

Meaning	You tried to link to or delete a 3+Start volume that is not registered in the 3+Start directory. You probably did one of the following: ▶ Misspelled the name of the volume; or ▶ Tried to access a volume that has not been created yet; or ▶ Specified a drive other than the default, C:, for the 3+Start volume.
---------	---

- | | |
|--------|--|
| Action | <ul style="list-style-type: none">▶ Make sure the name of the volume is registered in the 3+Start directory. One way to do this is using the 3S DIR command to request a directory of all registered start volumes. If the volume exists, try to enter it again, being careful to type it correctly; or▶ Create the 3+Start volume (with the 3S CREATE command); or▶ If you tried to access the 3+Start volume from a drive other than the default C:, try again but do not specify a drive. A 3+Start volume can only be linked to C:, the default drive. |
|--------|--|

Unrecoverable floppy disk read error.

Meaning	This message appears during installation. It indicates that the registration program cannot read from the diskette in the drive.
---------	--

Action	Check your diskette for corruption by running DOS CHKDSK. If this error appears even with a new diskette, try a different diskette or contact your dealer for assistance.
--------	---

Unrecoverable floppy disk write error.

Meaning	This message appears during installation. It indicates that the registration program cannot write to the diskette in the drive.
---------	---

Action	Make sure your floppy diskette has no write protect tab. If this error appears even with a new diskette, try a different diskette or contact your dealer for assistance.
--------	--

User <username> does not have a home directory.

Meaning	The share list is corrupt.
Action	Contact your dealer for assistance.

User must be the administrator.

Meaning	You tried to create, delete, or modify a 3+Start volume as a user. Only the network administrator (one who has administrator capabilities) can create, delete, or modify a 3+Start volume.
Action	Log in to the network as the administrator, or have the individual who has been given administrator capability perform the functions that require that capability.

Volume is linked.

Meaning	You tried to modify the attributes of a 3+Start volume that is linked.
Action	▶ Make sure the volume you intend to modify is unlinked, then try again; or ▶ Check the format of the command line and try again, being careful to enter only the parameters for that particular command. Make sure you position the parameters correctly and use the right punctuation.

You must be an admin user to run this program.

Meaning	The user name you entered is not registered with the Name service as having administrator capability.
Action	Check for a typing error or register the name in the Name service as having administrator capability.



DOS Error Messages

The following DOS error messages can appear during operation. Refer to your DOS manual for meaning and recovery action.

Bad call format error <device> -- Retry or Cancel (R/C).

Bad command error <device> -- Retry or Cancel (R/C).

Bad unit error <device> -- Retry or Cancel (R/C).

Data error <device> -- Retry or Cancel (R/C).

General failure error <device> -- Retry or Cancel (R/C).

No paper error <device> -- Retry or Cancel (R/C).

No server name in S_NAME file.

Non-DOS disk error <device> -- Retry or Cancel (R/C).

Not ready error <device> -- Retry or Cancel (R/C).

Read fault error <device> -- Retry or Cancel (R/C).

Sector not found error <device> -- Retry or Cancel (R/C).

Seek error <device> -- Retry or Cancel (R/C).

Write fault error <device> -- Retry or Cancel (R/C).

Write protect error <device> -- Retry or Cancel (R/C).

3+Route and 3+Remote Status Messages

The 3+Route and 3+Remote services write entries to a log file, STATUS.LOG, in the \3ROOT directory. These entries record incoming and outgoing telephone calls and any errors that may occur. You can use the entries in STATUS.LOG to monitor the use of 3+Route and 3+Remote and help isolate communication problems.

Accessing STATUS.LOG

Use the STATUS command to read the STATUS.LOG. How you access the file depends on the server's configuration:

- ▶ On a concurrent server with the File and Print services installed, you can access \3ROOT\STATUS.LOG through "fake C:" as the concurrent user on that server.
- ▶ On a concurrent server without the File and Print services installed, you can access \3ROOT\STATUS.LOG through the server's drive C:. Access in this case is read-only.
- ▶ On a non-concurrent server with the File and Print services installed, log in as that server's server-user and use the 3F SHARE command to share \3ROOT. You can then link to \3ROOT using the 3F LINK command.
- ▶ On a non-concurrent server without the File and Print services installed, shut down the server and restart in DOS mode. For information on shutting down the server, see Chapter 5.

The following list briefly explains what the status messages are and what information they include. In some cases the message is self-explanatory (i.e. a hangup due to schedule lapse). In other cases, these messages indicate something is wrong in your phone lines, your software, or your hardware. You can

troubleshoot those areas, or check with your dealer for more assistance.

Messages are written to the STATUS.LOG file in chronological order as each event occurs.

CALL: Originate NET: netnumber PORT: portnumber

Meaning	3+Route successfully called the indicated network on the indicated communication port.
---------	--

CALL: Originate fail NET: netnumber PORT: portnumber

Meaning	3+Route attempted to call the indicated network on the indicated communication port. The call failed. Commonly, this means the other network did not answer the call.
---------	---

CALL: Answer NET: netnumber PORT: portnumber

Meaning	3+Route answered a call from the indicated network on the indicated communication port.
---------	---

**Network Transmit error (number) to destination network
(netnumber)**

Meaning Network driver software reported an error while
 trying to send a packet to the indicated network.

STATUS.LOG uses abbreviations to show information. These
abbreviations are:

xmtd	transmitted
rcvd	received
xmterr	transmit error
lost	packets lost in transmit
rxmtd	retransmitted
chksum	checksum errors
dups	duplicates
ovrns	overruns
brks	breaks
frms	framing errors
parity	parity errors

CALL: Terminate NET: netnumber PORT: portnumber
XNS PKTS: xmtd: xx rcvd: yy xmterr: ww lost: zz
MNP PKTS: xmtd: xx rcvd: yy rxmtd: ww chksum: zzz dups: xx
SERIAL: ovrns: xx brks: yy frms: aa parity: bb

Meaning The telephone call with the indicated network on
 the indicated communication port was terminated.
 Commonly, this means the other end of the call
 hung up first. It could also mean that an internal
 driver timed out.

A

Error Messages

A-42

CALL: Inactive Hangup NET: netnumber PORT: portnumber
XNS PKTS: xmtld: xx rcvd: yy xmterr: ww lost: zz
MNP PKTS: xmtld: xx rcvd: yy rxmtd: ww chksum: zzz dups: xx
SERIAL: ovrns: xx brks: yy frms: aa parity: bb

Meaning During a telephone call with the indicated network on the indicated communication port, 3+Route hung up the telephone due to the elapse of a timeout specified in 3ROUTE.NSP.

CALL: Schedule Hangup NET: netnumber PORT: portnumber
XNS PKTS: xmtld: xx rcvd: yy xmterr: ww lost: zz
MNP PKTS: xmtld: xx rcvd: yy rxmtd: ww chksum: zzz dups: xx
SERIAL: ovrns: xx brks: yy frms: aa parity: bb

Meaning During a telephone call with the indicated network on the indicated communication port, 3+Route hung up the telephone when the time period elapsed for calling the other network, specified in 3ROUTE.NSP.

CALL: Transmit Fail NET: netnumber PORT: portnumber
XNS PKTS: xmtld: xx rcvd: yy xmterr: ww lost: zz
MNP PKTS: xmtld: xx rcvd: yy rxmtd: ww chksum: zzz dups: xx
SERIAL: ovrns: xx brks: yy frms: aa parity: bb

Meaning A transmission failure terminated the telephone call with the indicated network on the indicated communication port.

Appendix B: Diskette File Listings

This appendix lists each of the diskettes in the 3+ product family and their contents. Files are grouped by directory and listed in alphabetical order.

B

Diskette
File
Listings

B-2

Table B-1. Diskette No. 1

Installation #1 (Drivers)	
Directory	Files
Root (\)	INSTALL.BAT PARTNO
3UTIL	3INSBAT.BAT 3SRVINS.BAT BOTPC.BAT BOTPCF.BAT CINSTL.BAT CNGDV.EXE CRDIR.EXE CSED.EXE FLEXEC.BAT INSBOOT.BAT INSNDV.BAT INSPC.BAT INSTL1.BAT MEMSZE.COM NOINS.BAT QUERY.EXE RENEXEC.BAT RENEXECF.BAT SYSTAT.EXE YES YNPROMPT.COM
3DRIVERS	3STRTDRV.SYS ACP.SYS ACP3.SYS BUF.SYS EPATH.SYS ETH.SYS ETH3.SYS ETH505.SYS IDP.SYS LGL.SYS PRO.SYS RIP.SYS RIPSR.SYS RPC.SYS RUNMINDS.COM SPP.SYS TOK1060.SYS TOK605.SYS TOKIBM.SYS

Table B-2. Diskette No. 2a

Installation #2 (PC Server)	
Directory	Files
Root (\)	AUTOEXEC.BAT PARTNO
3CONFIG	3CISCK.EXE 3PLUS_ON.BAT 3SPONGE.COM COMPF.EXE DRIVEOFF.EXE HWINFO.EXE RMVPORTS.EXE S_PROMPT.EXE STATUS.EXE
3 PLUS	CIOSYS.EXE STARTUP.EXE SYNC.COM

Table B-3. Diskette No. 2b

Installation #2 (3Server)	
Directory	Files
Root (\)	AUTOEXEC.BAT PARTNO
3CONFIG	3CISCK.EXE 3PLUS_ON.BAT 3SPONGE.COM COMPF.EXE DRIVEOFF.EXE HWINFO.EXE RMVPORTS.EXE S_PROMPT.EXE STATUS.EXE
3PLUS	3CIOSYS.EXE STARTUP.EXE SYNC.COM

Table B-4. Diskette No. 3

Installation #3 (3INSTALL)	
Directory	Files
Root (\)	3INS3S.LIB 3INSPC.LIB 3INSTALL.EXE PARTNO SRV3S.DAT SRVPC.DAT

Table B-5. Diskette No. 4

3Server/3+System	
Directory	Files
Root (\)	3BIO.COM 3COMBIO.COM 3CONSOLE.EXE 3DEBUG.EXE 3DISK.COM 3DOS.COM 3EDLIN.EXE 3EMM.SYS 3HERALD.TXT 3LCD.SYS 3SAUTOEX.BAT 3SCONFIG.SYS 3SRVGO.EXE 3START.COM 3STATUS.EXE 3SWITCH.EXE AUTOEXEC.BAT BOOT.RCD CHKDSK.EXE COM.SYS COMMAND.COM CONFIG.SYS DISKSET0.COM DOSINIT.COM GLUE.BAT INSTALL.BAT LCONSOLE.EXE LOADER.COM PARTNO RHERALD.TXT SYSTAT.EXE UPGRADE.TXT

B

Diskette File Listings

B-6

Table B-6. Diskette No. 5

3+TurboShare PC Server	
Directory	Files
Root (\)	3CISDE.BAT 3CISDR.EXE 3CISIN.BAT 3CISRG.EXE CIOSYS.EXE ECIOSYS.EXE PARTNO
3CONFIG	3CISCK.EXE

Table B-7. Diskette No. 6

3+Share PC Server/File and Print	
Directory	Files
Root (\)	3SHARE5.EXE 3SHAREN.EXE 3SH5IN.BAT 3SHNIN.BAT 3SHRDE.BAT 3SHRDR.EXE 3SHRMG.EXE 3SHRMI.BAT 3SHRRG.EXE PARTNO
3CONFIG	3SHRCK.EXE 3SHRCK.LIB

Table B-8. Diskette No. 7

3+Share 3Server/File and Print	
Directory	Files
Root (\)	3SHAREN.EXE 3SHRDE.BAT 3SHRDR.EXE 3SHRIN.BAT 3SHRRG.EXE PARTNO
3CONFIG	3SHRCK.EXE 3SHRCK.LIB

Table B-9. Diskette No. 8

3+Share Server/Name	
Directory	Files
Root (\)	3NAMDE.BAT 3NAMIN.BAT 3NAME.EXE PARTNO
3NAME	NS_DEF.DOM NS_PROP.DIR
3CONFIG	3NAMCK.EXE

Table B-10. Diskette No. 9

3+Mail Server	
Directory	Files
Root (\)	3MA5IN.BAT 3MAIDE.BAT 3MAIDR.EXE 3MAIL5.EXE 3MAILN.EXE 3MAIMG.EXE 3MAIMI.BAT 3MAIRG.EXE 3MANIN.BAT PARTNO
3MAIL	3MAIL.MSG MSUP0001.COM
3CONFIG	3MAICK.EXE 3MAIL.NSM

Table B-11. Diskette No. 10

3+Route Server	
Directory	Files
Root (\)	3CNXSRV.NSP 3ROUDE.BAT 3ROUDR.EXE 3ROUIN.BAT 3ROURG.EXE 3RTCIO.EXE 3RTDOS.DOC 3RTDOS.EXE AUTOEXEC.DOS CSED.EXE DOS_ON.BAT PARTNO RTDOS.BAT RTDOS2.BAT
3CONFIG	3ROUCK.EXE 3ROUTE.NSM

B

Diskette
File
Listings

B-10

Table B-12. Diskette No. 11

3+Remote Server	
Directory	Files
Root (\)	3CNXSRV.NSP 3REMDE.BAT 3REMDR.EXE 3REMIN.BAT 3REMRG.EXE 3RMCIO.EXE 3RMDOS.DOC 3RMDOS.EXE AUTOEXEC.DOS CSED.BAT DOS_ON.BAT PARTNO RMDOS.BAT RMDOS2.BAT
3CONFIG	3REMCK.EXE 3REMOTE.NSM

Table B-13. Diskette No. 12

3+Share User #1	
Directory	Files
Root (\)	CNEXEC.BAT CREEXEC.BAT EPEXEC.BAT MINSES.EXE MSREDIR.EXE NB.COM PARTNO PRTSC.EXE SETNAME.EXE STEXEC.BAT
COMPAT	APPEND.COM MSNET.INI NET.EXE USE.EXE
UTIL	3COPY.EXE CPRINT.EXE MED.EXE

B

Diskette
File
Listings

B-12

Table B-14. Diskette No. 13

3+Share User #2	
Directory	Files
Root (\)	3F.EXE 3N.EXE 3P.EXE CINSTL1.BAT LOGIN.EXE LOGOUT.EXE PARTNO

Table B-15. Diskette No. 14

3+Mail User	
Directory	Files
Root (\)	3M.EXE 3MLOGIN.BAT ATT6300.COM MAIL.EXE MED.EXE MMINDER.EXE MUINSTAL.BAT PARTNO RENUM.EXE RUNMAIL.BAT

Table B-16. Diskette No. 15

3+Remote User	
Directory	Files
Root (\)	3R.EXE PARTNO PROFILE.SYS

Table B-17. Diskette No. 16

3+Backup Server	
Directory	Files
Root (\)	3BCKDE.BAT 3BCKIN.BAT BACKUP.EXE PARTNO TDRIVE.SYS
3BACKUP	3B.EXE AUTOTIMS
3CONFIG	3BCKCK.EXE
3UTIL	CRDIR.EXE CSED.EXE

Table B-18. Diskette No. 17

3+Start Server	
Directory	Files
Root (\)	3START.EXE 3STRDE.BAT STRDR.EXE 3STRIN.BAT 3STRRG.EXE PARTNO
3CONFIG	3STRCK.EXE
3START	BANNER.ASC BOOTPC.COM PRMPT.ASC
3START/STARTVOL	3S.EXE BRDOS31

Table B-19. Diskette No. 18

3+Menus Server	
Directory	Files
Root (\)	ADMIN.MNI ADMIN1.MNI ADMIN2.MNI ADMIN3.MNI ADMIN4.MNI ADMIN5.MNI ADMIN6.MNI EM.EXE INSTALL.BAT MACH.DIR MAINMENU.MNI MENUS.EXE NETWORK.MNI PARTNO PROFILE.SYS UTILITY.MNI

Appendix C: Server Directory Contents

This appendix presents tables with the following information.

- ▶ Directories that are created during installation on either the server or a floppy disk, depending on the configuration being installed.
- ▶ Files copied into the directories.
- ▶ Numbers corresponding to the diskettes where the original files are located. A Diskette Key lists the diskette names represented by the numbers in the tables.



In addition to the tables, CONFIG.SYS and AUTOEXEC.BAT file variations are presented at the end of the appendix. In the tables, reference to a particular CONFIG.SYS or AUTOEXEC.BAT file is presented as:

CONFIG.SYS (1)
or
AUTOEXEC.BAT (1)

where (1) represents the corresponding numbered file at the end of the appendix.

A line (|) separating file names or source diskette numbers indicates a choice. The file or disk used varies depending on your hardware configuration.

Diskette Key

Source Diskette Number	Diskette Label
1	3+ Installation #1 (Drivers)
2a	3+ Installation #2 (PC Server)
2b	3+ Installation #2 (3Server)
3	3+ Installation #3 (3INSTALL)
4	3Server/3+System
5	3+TurboShare Server
6	3+Share PC Server/File and Print
7	3+Share 3Server/File and Print
8	3+Share Server/Name
9	3+Mail Server
10	3+Route Server
11	3+Remote Server
12	3+Share User #1
13	3+Share User #2
14	3+Mail User
15	3+Remote User

16	3+Backup Server
17	3+Start Server
18	3+Menus Server

A complete list of all files contained on each of these diskettes can be found in Appendix B of this guide.

Some file names are changed during the installation process and therefore do not have the same name in the server directory as on the diskette itself. Files shown in the tables with no source diskette reference are created during the installation process.

Table C-1. PC Server Running CIOSYS

Directory	Source Diskette	Files
Root (\)	1 1 1 1 1 1 1 1 1	ACP.SYS AUTOEXEC.BAT (1) BUF.SYS CONFIG.SYS (1) ETH.SYS TOK605.SYS ETH 505.SYS TOKIBM.SYS IDP.SYS LGL.SYS PRO.SYS RIPSR.SYS RUNMINDS.COM SPP.SYS
\3ROOT	13 13 13 12 12 12 12 12	3F.EXE COMMAND.COM LOGIN.EXE LOGOUT.EXE MINSES.EXE MSREDIR.EXE NB.COM PRTSC.EXE SETNAME.EXE
\3PLUS	2a 2a 2a	CIOSYS.EXE S_NAME STARTUP.EXE SYNC.COM
\3PLUS\3CONFIG	2a 3 2a 2a 2a 2a 2a 2a 2a 1 2a 1 1	3CISCK.EXE 3INSTALL.EXE 3INSTALL.LIB 3PLUS_ON.BAT 3SPONGE.COM CIOSYS.NSD COMPF.EXE CONFDUMP.000 DRIVEOFF.EXE ENVIRON.DAT ENVIRON2.DAT ENVIRON3.DAT HWINFO.CFG HWINFO.EXE MEMSZE.COM S_PROMPT.EXE SERVICES.EXE SYSTAT.EXE YNPROMPT.COM

Table C-2. 3+ Local Workstation Startup

Directory	Source Diskette	Files
Root (\)	13	3F.EXE
		AUTOEXEC.BAT (3)
	1	BUF.SYS
		CONFIG.SYS (3)
	1	ETH.SYS TOK605.SYS ETH 505.SYS TOKIBM.SYS
	1	IDP.SYS
	1	LGL.SYS
	13	LOGIN.EXE
	13	LOGOUT.EXE
	12	MSREDIR.EXE
	12	NB.COM
	1	PRO.SYS
	12	PRTSC.EXE
	1	RIP.SYS
	1	RUNMINDS.COM
	12	SETNAME.EXE
	1	SPP.SYS
	1	SYSTAT.EXE

Table C-3. 3+Remote Workstation Startup

Directory	Source Diskette	Files
Root (\)	15	3R.EXE
		AUTOEXEC.BAT (4)
	1	BUF.SYS
		CONFIG.SYS (4)
	1	IDP.SYS
	1	LGL.SYS
	12	MINSES.EXE
	13	MSREDIR.EXE
	12	NB.COM
	1	PRO.SYS
	15	PROFILE.SYS
	12	PRTSC.EXE
	1	RIP.SYS
	1	RPC.SYS
	1	RUNMINDS.COM
	12	SETNAME.EXE
	1	SPP.SYS
	1	SYSTAT.EXE

Table C-4. 3+Share User

(Used with 3+Remote Workstation Startup diskette)

Directory	Source Diskette	Files
Root (\)	13	3F.EXE
	13	3N.EXE
	13	3P.EXE
	13	LOGIN.EXE
	13	LOGOUT.EXE

Table C-5. 3+Start Master

Directory	Source Diskette	Files
Root (\)	13	3F.EXE
		AUTOEXEC.BAT (5)
	1	BUF.SYS
		CONFIG.SYS (5)
	1	ETH.SYS
	1	IDP.SYS
	1	LGL.SYS
	13	LOGIN.EXE
	13	LOGOUT.EXE
	12	MSREDIR.EXE
	12	NB.COM
	1	PRO.SYS
	12	PRTSC.EXE
	1	RUNMINDS.COM
	12	SETNAME.EXE
	1	SPP.SYS
		STRDRV.SYS



Table C-6. 3+ Local Workstation Startup (with EPATH)

Directory	Source Diskette	Files
Root (\)	13	3F.EXE
		AUTOEXEC.BAT (6)
	1	BUF.SYS
		CONFIG.SYS (6)
	1	EPATH.SYS
	1	ETH.SYS TOK605.SYS ETH505.SYS TOKIBM.SYS
	1	IDP.SYS
	1	LGL.SYS
	13	LOGIN.EXE
	13	LOGOUT.EXE
	12	MINSES.EXE
	12	MSREDIR.EXE
	12	NB.COM
	1	PRO.SYS
	12	PRTSC.EXE
	1	RIP.SYS
	1	RUNMINDS.COM
	12	SETNAME.EXE
	1	SPP.SYS
	1	SYSTAT.EXE

Table C-7. 3Server

Directory	Source Diskette	Files
Root (\)	4	3BIO.COM
	4	3DEBUG.EXE
	4	3DOS.COM
	4	3EDLIN.EXE
	4	3EMM.SYS
	4	3HERALD.TXT
	4	3LCD.SYS
	4	3SRVGO.EXE
	4	3START.COM
	4	3SWITCH.EXE
	1	ACP3.SYS
		AUTOEXEC.BAT (1)
	1	BUF.SYS
	4	CHKDSK.EXE
	4	COM.SYS
	4	COMMAND.COM
		CONFIG.SYS (7)
	1	ETH3.SYS TOK1060.SYS
		GROWTH.SPC
	1	IDP.SYS
	4	LOADER.COM
	1	PRO.SYS
	1	RIPSR.SYS
	1	RUNMINDS.COM
	1	SPP.SYS

(continued)



Table C-7. 3Server (continued)

Directory	Source Diskette	Files
\3PLUS	2b 2b 2b	CIOSYS.EXE STARTUP.EXE SYNC.COM S_NAME
\3PLUS\3CONFIG	2b 3 2b 4 2b 2b 1 2b 4 1	3CISCK.EXE 3INSTALL.EXE 3INSTALL.LIB 3PLUS_ON.BAT 3SRVGO.COM CIOSYS.NSD CIOSYS.NSP COMPF.EXE ENVIRON.DAT ENVIRON2.DAT ENVIRON3.DAT HWINFO.CFG HWINFO.EXE MEMORY.REQ MEMSZE.COM S_PROMPT.EXE SERVICES.EXE SYSTAT.EXE SYSTEM.CFG YNPROMPT.COM

Table C-8. 3+Share Service

Directory	Source Diskette	Files
\3PLUS	6/7	3SHARE.EXE
\3PLUS\3CONFIG	6/7 6/7 6/7	3SHARE5.NSD 3SHAREN.NSD 3SHRCK.EXE 3SHRCK.LIB

Table C-9. 3+Name Service

Directory	Source Diskette	Files
\3PLUS	8	3NAME.EXE
\3PLUS\3CONFIG	8	3NAMCK.EXE 3NAME.NSD
\3PLUS\3NAME	8 8	NS_DEF.DOM NS_PROP.DIR

Table C-10. 3+Mail Service

Directory	Source Diskette	Files
\3PLUS	9	3MAIL.EXE
\3PLUS\3CONFIG	9 9	3MAICK.EXE 3MAIL.NSD 3MAIL.NSM
\3PLUS\3MAIL	9 9	3MAIL.MSG MSUP0001.COM

Table C-11. 3+Route Service

Directory	Source Diskette	Files
\3PLUS	10	3ROUTE.EXE
\3PLUS\3CONFIG	10	3ROUCK.EXE
	10	3ROUTE.NSD 3ROUTE.NSM

Table C-12. 3+Remote Service

Directory	Source Diskette	Files
\3PLUS	11	3REMOTE.EXE
\3PLUS\3CONFIG	11	3REMCK.EXE
	11	3REMOTE.NSD 3REMOTE.NSM

Table C-13. 3+Start Service

Directory	Source Diskette	Files
\3PLUS	17	3START.EXE
\3PLUS\3CONFIG	17	3START.NSD 3STRCK.EXE
\3PLUS\3START	17 17 17	BANNER.ASC BOOTPC.COM PRMPT.ASC
\3PLUS\START\STARTVOL	17 17	3S.EXE BRDOS31

Table C-14. 3+Backup Service

Directory	Source Diskette	Files
\3PLUS	16	BACKUP.EXE
\3PLUS\3CONFIG	16	3BCKCK.EXE BACKUP.NSD
\3PLUS\3BACKUP	16 16	3B.EXE AUTOTIMS
\3UTIL	16 16	CRDIR.EXE CSED.EXE

Table C-15. 3+TurboShare Service

Directory	Source Diskette	Files
\3PLUS	5	CIOSYS.EXE
\3PLUS\3CONFIG	5	3CISCK.EXE EMS.NSD



CONFIG.SYS Files

1. device=eth.sys | eth505.sys | tokibm.sys | tok605.sys
 device=pro.sys 32 2 2
 device=buf.sys
 device=idp.sys
 device=spp.sys
 device=lgl.sys
 device=ripsr.sys
 buffers=6
 files=20
 lastdrive=g

2. device=eth.sys | eth505.sys | tokibm.sys | tok605.sys
 device=pro.sys 32 2 2
 device=buf.sys
 device=idp.sys
 device=spp.sys
 device=lgl.sys
 device=acp.sys
 buffers=6
 files=20
 lastdrive=g

3. device=eth.sys | eth505.sys | tokibm.sys | tok605.sys
 device=pro.sys 8 20 2
 device=buf.sys
 device=idp.sys
 device=spp.sys
 device=lgl.sys
 device=rip.sys
 buffers=6
 files=20
 lastdrive=g

4. device=rpc
 device=pro.sys 8 2 2

device=buf.sys
device=idp.sys
device=spp.sys
device=lgl.sys
device=rip.sys
buffers=8
files=16
lastdrive=g

5. device=eth.sys | eth505.sys | tokibm.sys | tok605.sys
 device=pro.sys 8 20 2
 device=buf.sys
 device=idp.sys
 device=spp.sys
 device=lgl.sys
 device=rip.sys
 device=sttrdrv.sys
 buffers=6
 files=20
 lastdrive=g

6. device=eth.sys | eth505.sys | tokibm.sys | tok605.sys
 device=pro.sys 8 20 2
 device=buf.sys
 device=idp.sys
 device=spp.sys
 device=lgl.sys
 device=rip.sys
 device=epath.sys
 buffers=6
 files=20
 lastdrive=g

7. device=eth3.sys -b53 -h2 | tok1060.sys
 device=lcd.sys
 device=pro.sys 32 0 0
 device=buf.sys
 device=idp.sys
 device=spp.sys
 device=com.sys
 device=ripsr.sys
 buffers=2
 files=10

AUTOEXEC.BAT FILES

1. echo off
 echo 3+ Server Boot Up batch file - version 1.1
 \3config\3plus_on.bat

2. echo off
 echo 3+ Server Boot Up batch file from a floppy - version
 1.1
 b:
 cd \
 \3plus\3config\3plus_on.bat

3. echo off
 echo 3+ Workstation Startup batch file - version 1.1
 runminds mindspro mindsbu mindseth mindsidp mindsspp
 mindslgl mindsrp
 nb
 minses
 msredir /z:4096
 setname \$\$\$com\$\$
 prtsc

4. echo off
 echo 3+ Remote PC Startup batch file - version 1.1
 3r
 runminds mindspro mindsbu mindseth mindsidp mindsspp
 mindslgl mindsrp
 nb 2 1 1
 minses
 msredir /z:4096
 setname \$\$\$com\$\$
 prtsc

5. echo off
 echo 3+Start Workstation Startup batch file - version 1.1
 runminds mindspro mindsbu mindseth mindsidp mindsspp
 mindslgl mindsrp
 nb
 minses
 msredir /z:4096
 setname \$\$\$com\$\$
 prtsc



```
login
3f link d: \\sys\sys; link e:
e:
path=d:\;e:\
if not exist autouser.bat goto end
autouser
:end

6.  echo off
    echo 3+Workstation with EPATH Startup batch file - version
        1.0
    runminds mindspro mindsbuf mindseth, mindsdp mindsspp
        minds1gl mindsrip 4mindsdrv
    nb
    minses
    msredir /z:4096
    setname $$3com$$
    prtsc
```

Appendix D: ASCII Character Set

ASCII Character	Dec	Equivalent Forms		
		Binary	Oct	Hex
NUL	0	00000000	000	00
SOH	1	00000001	001	01
STX	2	00000010	002	02
ETX	3	00000011	003	03
EOT	4	00000100	004	04
ENQ	5	00000101	005	05
ACK	6	00000110	006	06
BEL	7	00000111	007	07
BS	8	00001000	010	08
HT	9	00001001	011	09
LF	10	00001010	012	0A
VT	11	00001011	013	0B
FF	12	00001100	014	0C

D

ASCII Character Set

D-2

ASCII Character	Dec	Equivalent Forms		Hex
		Binary	Oct	
CR	13	00001101	015	0D
SO	14	00001110	016	0E
SI	15	00001111	017	0F
DLE	16	0010000	020	10
DC1	17	00010001	021	11
DC2	18	00010010	022	12
DC3	19	00010011	023	13
DC4	20	00010100	024	14
NAK	21	00010101	025	15
SYNC	22	00010110	026	16
ETB	23	00010111	027	17
CAN	24	00011000	030	18
EM	25	00011001	031	19
SUB	26	00011010	032	1A
ESC	27	00011011	033	1B
FS	28	00011100	034	1C
GS	29	00011101	035	1D
RS	30	00011110	036	1E
US	31	00011111	037	1F
space	32	00100000	040	20
!	33	00100001	041	21
"	34	00100010	042	22
#	35	00100011	043	23
\$	36	00100100	044	24
%	37	00100101	045	25
&	38	00100110	046	26
'	39	00100111	047	27
(	40	00101000	050	28
)	41	00101001	051	29
*	42	00101010	052	2A
+	43	00101011	053	2B
,	44	00101100	054	2C
-	45	00101101	055	2D
.	46	00101110	056	2E

ASCII Character	Dec	Equivalent Forms Binary	Oct	Hex
/	47	00101111	057	2F
0	48	00110000	060	30
1	49	00110001	061	31
2	50	00110010	062	32
3	51	00110011	063	33
4	52	00110100	064	34
5	53	00110101	065	35
6	54	00110110	066	36
7	55	00110111	067	37
8	56	0111000	070	38
9	57	00111001	071	39
:	58	00111010	072	3A
;	59	00111011	073	3B
<	60	00111100	074	3C
=	61	00111101	075	3D
>	62	00111110	076	3E
?	63	00111111	077	3F
@	64	01000000	100	40
A	65	01000001	101	41
B	66	01000010	102	42
C	67	01000011	103	43
D	68	01000100	104	44
E	69	01000101	105	45
F	70	0100110	106	46
G	71	01000111	107	47
H	72	01001000	110	48
I	73	01001001	111	49
J	74	01001010	112	4A
K	75	01001011	113	4B
L	76	01001100	114	4C
M	77	01001101	115	4D
N	78	01001110	116	4E
O	79	01001111	117	4F
P	80	01010000	120	50

D

ASCII
Character
Set

D-4

ASCII Character	Dec	Equivalent Forms		
		Binary	Oct	Hex
Q	81	01010001	121	51
R	82	01010010	122	52
S	83	01010011	123	53
T	84	01010100	124	54
U	85	01010101	125	55
V	86	01010110	126	56
W	87	01010111	127	57
X	88	01011000	130	58
Y	89	01011001	131	59
Z	90	01011010	132	5A
[	91	01011011	133	5B
\	92	01011100	134	5C
]	93	01011101	135	5D
^	94	01011110	136	5E
_	95	01011111	137	5F
`	96	01100000	140	60
a	97	01100001	141	61
b	98	01100010	142	62
c	99	01100011	143	63
d	100	01100100	144	64
e	101	01100101	145	65
f	102	01100110	146	66
g	103	01100111	147	67
h	104	01101000	150	68
i	105	01101001	151	69
j	106	01101010	152	6A
k	107	01101011	153	6B
l	108	01101100	154	6C
m	109	01101101	155	6D
n	110	01101110	156	6E
o	111	01101111	157	6F
p	112	01110000	160	70
q	113	01110001	161	71
r	114	01110010	162	72

ASCII Character	Dec	Equivalent Forms Binary	Oct	Hex
s	115	01110011	163	73
t	116	01110100	164	74
u	117	01110101	165	75
v	118	01110110	166	76
w	119	01110111	167	77
x	120	01111000	170	78
y	121	01111001	171	79
z	122	01111010	172	7A
{	123	01111011	173	7B
	124	01111100	174	7C
}	125	01111101	175	7D
~	126	01111110	176	7E
DEL	127	01111111	177	7F

Appendix E: Copying Files Using 3COPY

3COPY is a general purpose file copy utility. It is similar to the DOS COPY command, but provides added flexibility. You can request date-sensitive copy, configuration prompts, and dry-runs. You can copy files from many directories in a directory tree, and you can copy entire directory trees.

3COPY runs on an IBM PC or compatible computer with 256K memory and DOS version 2.1 or higher.

You can run 3COPY from the distribution disk or from a backup copy. You can also install 3COPY on a fixed disk or on a network volume or directory. To install 3COPY, copy the 3COPY.EXE program file onto the desired location using the DOS COPY command.

3COPY Command Format

3COPY *fromspec* [*tospec*] [/s] [/c] [/n] [/d] [/h] [/f=file]

Parameters

<i>fromspec</i>	Source file specification of files to copy. You can include drive and path or allow them to default to the current drive and path. You can include "*" and "?" wildcards. For more information on DOS filespecs, please refer to your DOS manual.
<i>tospec</i>	Destination drive and path. Do not include a file name and extension; 3COPY does not rename files as it copies. If you omit this parameter, 3COPY will copy to the current default drive and directory.
s	Include files in subdirectories below fromspec.
c	Ask for confirmation of each file to copy.
n	No copy -- 3COPY just displays what it would do in a normal case ("dry run").
d	Check dates and only copy if source file datetime is newer than the destination file datetime or if the file does not exist in the destination directory. If the source file datetime is older than the destination file datetime, the file will not be copied. (Multiple diskette output disabled with this option).

- h** Display help -- don't process anything.
- f=file** Route output to a report file as well as display onscreen. Character device designators such as /prn work as expected. If the report file is in the source file path, it will be incorrectly copied.

Remarks

The parameters /s, /c, /d, /n, /h, and /f=file can be concatenated (linked together) or separated. The /f=file parameter must be the last or only parameter in a group. For example, the following are all valid and work as expected:

```
3COPY *.* a: /s/d
3COPY *.* a: /sd
3COPY *.* a: /s/d/n 3COPY *.* a: /s/f=report
3COPY *.* a: /sf=report /d
```

Copying Directory Structures

When you use the /s parameter, you create or overwrite files in a directory structure which mirrors the "from" directory structure. The starting point of the target structure may have a different name than that of the source structure, but the subdirectory names will be identical. 3COPY will create subdirectories in the target structure if they do not already exist. For example, assume you have a working disk drive C: and a finance department archive disk drive D: and the directory structures look like this:

```
C:\money\models
C:\money\models\eng
C:\money\models\mfg
C:\money\models\fin
```

```
D:\fin
D:\fin\pvt
D:\fin\mfg
```

If you used the following command:

```
3COPY C:\money\models\*.wks D:\fin /s
```

then 3COPY would create the following new directories on D:

```
D:\fin\eng
D:\fin\fin
```

The file C:\money\models\summ.wks would be copied to D:\fin\summ.wks. The file C:\money\models\eng\proj.wks would be copied to D:\fin\eng\proj.wks.

To Cancel a Copy

3COPY scans for the Escape character entered from the keyboard during copy operations. If you enter [ESC], 3COPY will cancel the copy operation at the end of the current file. You may also cancel a copy by typing [ESC] in response to the prompt **Copy [filename]? (Y/N) >**.

Multiple Diskette Output

If your output volume is a diskette, you do not use the /d option, and your output volume fills up, 3COPY will give you the option to insert another diskette and continue copying. When you do this, the directory structures on the multiple output diskettes may appear to be incomplete. For example, assume your source directory is DIRA and contains subdirectories DIRA\SUB1, DIRA\SUB2, and DIRA\SUB3. If it takes two output diskettes to hold all the files, then you could end up with \SUB1 and \SUB21 on the first diskette and \SUB2 and \SUB3 on the second diskette. The files from DIRA\SUB2 end up split between the two output diskettes. When you restore from multiple diskettes, you can use the same command

for each one and reestablish the original directory structure on a large output fixed disk.

Restrictions

1. 3COPY clears the DOS "F1" and "F3" memory. After running 3COPY, these function keys do not recall commands issued prior to the 3COPY command.
2. 3COPY does not enable output verification. If you want verification, use the DOS VERIFY command. For example:

```
C> VERIFY ON
C> 3COPY c:\mypath\*.dat d:\yourpath /s
C> VERIFY OFF
```

3. 3COPY creates subdirectories beneath the target directory, as necessary, to mirror the source directory tree structure. Selective copies with wildcard characters and multiple diskette output sequences can result in the creation of empty subdirectories to provide the appropriate directory structure. If you try to copy to a very full diskette or network volume, 3COPY might create one or more subdirectories before discovering that the next file it needs to copy will not fit. When this happens, 3COPY does not remove the subdirectories that it created. You can remove them with the DOS RMDIR command.
4. Typing commands "ahead" of 3COPY while it is running can cause unpredictable results. You can, however, execute several 3COPY commands from within a .BAT batch file.

Appendix F: Technical Support

This section tells you how to do the following:

- ▶ Attempt to isolate and solve a network problem
- ▶ Confirm that a problem exists before you call your network supplier
- ▶ Contact your network supplier
- ▶ Obtain support services from your network supplier or 3Com Corporation
- ▶ Obtain a "Return-to-Factory" authorization for failed products

Problem Sources

There are five common sources of network problems:

- ▶ A network user might misunderstand a network command or procedure and get an unexpected result.
- ▶ A new hardware component is installed or configured incorrectly, or is incompatible.
- ▶ Application software can cause problems if it is not used correctly, if the software itself contains bugs, or if it is incompatible with network software or other application software.
- ▶ Cable problems can occur if the cable is connected or routed incorrectly, cable specifications are violated, the cable develops a mechanical or electrical fault, or the network is inadvertently disconnected.
- ▶ Overloaded servers can slow down network response times, or a personal computer or server can develop a hardware problem.

Problem-Solving Tools

The following tools can help you to diagnose and solve network problems.

- ▶ Your network diagram and log, complete records and familiarity with your network configuration are invaluable tools in resolving problems.
- ▶ Ring loopback plugs. Loopback plugs let you isolate and test portions of the network to determine where the problem lies.
- ▶ Diagnostic software supplied with your 3Com server or board.

- ▶ The *3Com Third Party Product Support Guide* and your network supplier can help you confirm that your network components and software are compatible.
- ▶ Network hardware and software guides -- for example, the *3Server3 Guide*, the *3+ Administrator's Guide*, and the *3+Share User's Guide* -- your computer's operating manual and DOS manual, and your software manuals. They can help you interpret error messages.
- ▶ Digital ohmmeter. A digital ohmmeter or multimeter, available from your local electrical supply shop, will help you to identify cable defects, such as an open circuit or a short circuit, by measuring the cable's DC resistance. If you do not have a digital ohmmeter, an analog meter can also be helpful.

For additional information and suggestions, consult the troubleshooting sections of applicable guides.

Before You Contact Your Network Supplier

These steps help you verify your problem.

1. If you are having trouble installing hardware or software on your network, see the guide supplied with the hardware or software, and repeat the installation procedures. Run any tests that are described to verify the current installation.
2. Check the *3Com Third Party Product Support Guide* to assure that the various components of your network are compatible and you have a supported configuration.
3. Check the cables and connectors to see that they have been attached correctly.

4. If the problem occurs on a single workstation, switch it with a known working unit and see if the problem persists.
5. If the problem continues, call your network supplier for assistance.

Contacting Your Network Supplier

You should have the following information at hand before you talk to your network supplier:

- ▶ A complete description of the problem, including the following: the nature of the problem, duration of the problem, when the problem occurs, the components with which the problem occurs, and whether the problem still occurs if the application is used off the network.
- ▶ An accurate list of the network equipment model and serial numbers, and software product part numbers, including the software revision levels. Include the date you purchased the products.
- ▶ An accurate list of your equipment types and model numbers for personal computers, monitors, fixed disks, printers, and so on; and a list of the third party software you are using, including DOS level and software revision level.
- ▶ A list of any changes that have been made to your system configuration prior to your problem, including hardware changes, operating system software or application software changes, or system administration procedures.

What Support to Expect from Your Network Supplier

All authorized product suppliers are required to provide network planning, installation, network administration and use training, and board exchange service. They are the best sources of expertise on special applications and multi-vendor networks.

If you need a second source, you can contact a 3Com Authorized Service Center (ASC) or Complete Network Center (CNC). They have personnel trained by 3Com to provide hardware maintenance, and are required to stock spare parts at each ASC or CNC location. If your supplier is unable to handle your repair requirements, contact the 3Com Customer Relations Department at (415) 960-9542 or (415) 961-9602 to locate the ASC or CNC nearest you.

If you are unable to secure training or resolve your technical support or repair problem with your authorized supplier, or through an ASC or CNC, 3Com stands behind both its products and its authorized suppliers, and will work with you and your authorized supplier to reach a satisfactory solution.

To complement authorized supplier services, 3Com offers for purchase in-depth telephone assistance and network training courses, technical bulletin and update subscriptions, return-to-factory repair, and consulting services for network administrators and software developers. These services are intended to augment the support provided by your supplier and are no substitute for local and on-site support purchased from your network supplier.

You can get information on 3Com service products from authorized 3Com suppliers or by contacting the 3Com Customer Relations Department directly at (415) 960-9542.

Return-to-Factory Repairs

Your network supplier might provide a low cost return-to-factory repair or replacement service for non-critical repair situations, or you can purchase this service directly from 3Com. In either case, you will need to follow a procedure similar to the following:

1. Contact your supplier or 3Com for instructions, repair turnaround schedule, and estimated price BEFORE you return any item for repair.
2. When you call, have the following information:
 - ▶ company name
 - ▶ shipping address
 - ▶ product name
 - ▶ serial number
 - ▶ failure symptoms with diagnostic error messages
 - ▶ name and phone number of technical contact
3. You will probably be given some type of return material authorization number (RMA). If 3Com is your chosen repair service provider, your assigned RMA number must appear on the outside of the mailing container.
4. You will need to arrange payment terms unless you have a service contract with your supplier. If 3Com is your chosen repair supplier, payment is by COD, MasterCard, or VISA. Terms are available only if special authorization has been arranged.
5. Proper packaging and shipping is very important to protect your equipment and assure expected repair turnaround. When you return an item for repair, ship the item as follows:

- a. Package carefully. Use the original container if possible or double box, especially for large or heavy units such as a 3Server. EtherLink and other boards should be wrapped in an anti-static bag. Do not pack them directly in popcorn. Do not return connectors, manuals, or cables.
 - b. Mark the RMA number clearly on the outside of the shipping container or follow your supplier's instructions.
 - c. Select the method of shipment which meets your repair turnaround requirements, keeping in mind weekends and holidays.
 - d. Ship to the address provided by your supplier or the 3Com RMA department. An incorrect or incomplete address can delay your repair.
6. Warranty repairs must be accompanied by dated proof of purchase.
7. Your supplier or 3Com will test incoming items carefully. Occasionally, when a hardware error cannot be duplicated, the unit will be returned with "No Problem Found" indicated. You will be charged for the testing and handling in this case. This charge also applies to items under warranty.
8. If your need is urgent, most suppliers and 3Com have an expedited repair service at additional cost. If you are unable to secure local service, you might wish to inquire about this option.

Index



NOTE: The "3" and "3+" preceding some terms have been ignored for alphabetizing purposes.



NOTE: Commands are listed within the various 3+ Network service entries; for example, File service and Name service. The page numbers in **bold** type refer to pages where information is summarized.

3270 Service, 2-28

A

access rights

- data file access, 4-31 to 4-34
- \3PLUS\3CONFIG directory, 4-35
- shared directories, 4-30 to 4-31, 6-12 to 6-13
- 3+Start volumes, 4-41 to 4-42
- summarized, **6-18 to 6-19**
- table of, 2-18

administrator, 2-2 to 2-4

- administrator privileges, 4-17
- backup administrator, 4-19
- capabilities, 2-4
- home directory for, 4-11 to 4-12
- LOGIN first time, 4-10
- 3+Menus administrator functions, 4-4 to 4-5
- password for, 4-11
- see also* network management

ADMIN.MNI files, 4-4 to 4-4-5

Admin. *See* administrator

aliases, 2-8

- add to Name Service, 4-19 to 4-20
- naming conventions, 4-8 to 4-9

applications software

- copy to APPS directory, 4-27 to 4-29
- for DOS 2.X-based networks, 4-31
- EtherSeries versions, 4-28
- file locking protection, 4-34
- read-only access to control files, 4-29

APPS directory

- copy applications software, 4-27 to 4-29
- copy DOS utilities, 4-26 to 4-27
- create, 4-23 to 4-24

- APPS directory (continued)
 - described, 4-20 to 4-21
 - 3+Service files, 1-5, 4-22
- ASC (Authorized Service Center), F-5
- ASCII character set, D-1 to D-5
- Authorized Service Center (ASC), F-5
- AUTOEXEC.BAT file, listings of, C-16 to C-18
- available space, 5-4 to 5-5

B

- backing up files
 - DOS BACKUP command, 5-16 to 5-19
 - overview of procedures, 5-12 to 5-15
- 3+Backup Server, file listings, B-13
- backup administrator, 4-19
- Backup Service
 - administrator functions (3+Menus), 4-5
 - server directory contents, C-13
 - setup described, 1-11
 - share \3PLUS\3BACKUP directory, 4-59 to 4-60
- banner page, 1-9, 4-49, 6-119

C

- cancel a command, 3-10
- check disk space, 5-4
- CNC (Complete Network Center), F-5
- commands
 - canceling, 3-10

- commands, canceling (continued)
 - conventions used, 3-2 to 3-3
 - correct errors, 3-10
 - default values, 3-7
 - enter from DOS, 3-10 to 3-11
 - HELP command, 3-12 to 3-12
 - multiple, 3-8
 - no prompt (/NP) parameter, 3-10
 - overview of, 3-1 to 3-2, 6-2 to 6-9
 - parameters, 3-4 to 3-7
 - return to DOS, 3-11 to 3-12
 - syntax notation, 3-3 to 3-4
 - wildcard characters in, 3-8 to 3-9
 - see also* specific network services
- Complete Network Center (CNC), F-5
- concurrent input/output system (CIOSYS), 4-18
- concurrent server, 2-2
- concurrent user, 2-2
- CONFDUMP files, 5-43
- CONFIG.SYS file
 - DEVICE=EPATH.SYS, 4-45
 - LASTDRIVE statement, 2-20
 - listings of, C-14 to C-16
- configuration directory (\3PLUS\3CONFIG), 4-21, 4-35
- 3COPY program, 5-8
 - cancel, E-4
 - command format, E-2
 - directory structure copying, E-3 to E-4
 - multiple disk output, E-4 to E-5
 - parameters, E-2 to E-3
 - restrictions, E-5
 - use of, E-1
- Customer Relations Department (3Com), F-5
- customer support, F-1 to F-7

D

date setting, 6-106

defaults

- access rights, 6-19

- command parameters, 3-7

- shared directories allowed, 6-17

- shared printers allowed, 6-17

deinstall and move network services, 5-40 to 5-44

DEVICE = EPATH.SYS, 4-45

directories

- copy with 3COPY, E-3 to E-4

- create, 2-14

- DOS hierarchical structure, 2-11 to 2-14

- first-level directory, 2-14

- home directory, 2-11, 4-11 to 4-12

- 3+Share server directory structure, 2-15

- see also* shared directories

disk drive definitions, 4-18

diskette file listings

- Backup Server, B-13

- disk numbers listed, C-2 to C-3

- installation

 - drivers, B-2

 - 3INSTALL, B-4

 - PC Server, B-3

 - 3Server, B-3

- Mail Server, B-8

- Mail User, B-12

- Menus Server, B-15

diskette file listings (continued)

- Remote Server, B-10
- Remote User, B-13
- Route Server, B-9
- 3Server/3+System, B-5
- Share PC Server/File and Print, B-6
- Share 3Server/File and Print, B-7
- Share Server/Name, B-7
- Share User 1, B-11
- Share User 2, B-12
- Start Server, B-14
- TurboShare PC Server, B-6

disk space, 5-4 to 5-5

distribution lists (groups), 4-38 to 4-40

domains, 2-7

- add to Name Service, 4-13 to 4-15

- naming conventions, 4-10

- network number, 2-9

DOS

commands

- ATTRIB, 4-29

- BACKUP, 5-16 to 5-19

- CD, 2-19

- COPY, 4-63

- COPY CON:, 4-63

- DELETE, 5-9

- MKDIR, 2-14

- PATH, 4-29

- RESTORE, 5-19 to 5-22

- RMDIR, 5-9

copy utilities to APPS, 4-26 to 4-27

directory structure, 2-11 to 2-14

earlier versions and incompatibility, 4-26

- DOS (continued)
 - enter 3+ commands, 3-10 to 3-11
 - error messages, A-38
 - file locking protection, 4-34
 - LASTDRIVE statement, 2-20
 - read-only access, 4-29
 - return to, 3-11 to 3-12
 - versions 3.1 and 3.2, 2-11
- drive identifiers, 2-20
 - define standard conventions, 4-6
- \3DRIVERS\EPATH.SYS driver, 4-45
- drivers, diskette file listings, B-2

E

- EPATH driver, 4-28
 - access with 3+Start, 1-8
- error messages
 - DOS messages, A-38
 - 3+Network Services, A-2 to A-37
 - status messages (Route and Remote services), A-39 to A-42
- EtherLink board, with EtherStart chip, 4-41
- Ethernet network, 3+NetConnect Service, 2-27
- EtherSeries servers
 - multiuser software, 4-28
 - 3+Start access, 4-45
 - use with 3+Start, 1-8
- EtherStart
 - 3+Start software, 2-25
 - 3+Start volumes, 4-41
- exit to DOS, 3-11 to 3-12

F

factory repairs, F-6 to F-7

"Failed to add user" message, 4-58

file locking protection, 4-34

File Service

commands

DIR, 5-8

LINK, 2-20, 4-25, 5-7, 5-8, 5-10

MOD, **6-11 to 6-14**

overview of, 6-2 to 6-3

parameters of, 3-5, 3-7

SHARE, 2-13, 2-14, 4-24, 4-42 to 4-43, 5-7, **6-15 to 6-20**

SHUTDOWN, 5-47 to 5-49, **6-21 to 6-23**

SHUTDOWN /NEW, 5-47

STATUS, 5-4

UNLINK, 2-20, **6-25 to 6-26**

UNSHARE, 5-8, 5-9, **6-27 to 6-28**

copy

applications software to APPS, 4-27 to 4-29

DOS utilities to APPS, 4-26 to 4-27

3+Mail user software, 4-26

3+Share user software, 4-25

data file access, 4-31 to 4-34

deinstalling, 5-41

LOGIN as server-user, 4-23

overview, 2-11

setup described, 1-5, 4-20 to 4-22

shared program directories, 4-30 to 4-31

shut down services, 5-47 to 5-49

users on other networks, 4-57 to 4-58

first-level directory, 2-14

form number, printers 6-120

G

general user. *See users*

glossary, 7-1 to 7-7

groups, 2-8

- delete, 6-78

- modify Name Service entries, 6-96

- in the Name Service, 4-38 to 4-40

H

hard disks

- adding to system, 5-4 to 5-5

- backing up files, 5-12 to 5-19

- restoring files, 5-19 to 5-22

HELP command, 3-12 to 3-12

home directory, 2-11

- for administrator, 4-11 to 4-12

- users, 4-18

I

IBM PC Network, 2-11

- naming conventions, 4-20

incremental file backups, 5-18 to 5-19

- restoring, 5-21 to 5-22

initial user/Admin. *See administrator*

3INSTALL program, 5-5

- add a printer, 5-27

- configuration report generation, 5-43

- 3INSTALL program (continued)
 - deinstall services, 5-40
 - delete a printer, 5-31
 - diskette file listings, B-4
 - modems, adding and deleting, 5-35
 - print buffer size, 5-24
 - printer configuration changes, 5-26
 - 3+Route Service updating, 5-36
- installation disks, file listings, B-2 to B-4

L

- LASTDRIVE statement, 2-20
- local workstation startup
 - server directory contents C-5
 - with EPATH, C-8
- LOGIN command, 3-2
 - first time use, 4-10
- LOGOUT command, 3-2
- LPTn:. See printer identifiers

M

- mailboxes, in use, 6-51
- Mail Server disk, file listings, B-8
- Mail Service
 - administrator functions (3+Menus), 4-5
 - commands
 - DEL1M, 6-31 to 6-32
 - DEL1O, 6-37 to 6-39
 - DELM, 6-29 to 6-30
 - DELO, 6-33 to 6-35
 - DIRM, 6-41 to 6-42

Mail Service, commands (continued)

DIRO, 6-43 to 6-44

HELP, 6-45 to 6-46

overview of, 6-4

SERVER=, 5-47, 6-47 to 6-48

SHUTDOWN, 5-46 to 5-47, 6-49 to 6-50

STATUS, 6-51 to 6-52

deinstalling, 5-42 to 5-43

distribution lists (groups), 4-38 to 4-40

overview, 2-23 to 2-24

server directory contents, C-11

setup described, 1-6

shut down service, 5-46 to 5-47

users on other networks, 4-57

zero-length files, 5-42

Mail User disk, file listings, B-12

mainframe computers, PC access to, 2-28

Menus Server disk, file listings, B-15

Menus Service

administrator functions listed, 4-4 to 4-4-5

administrator menu example, 4-3

overview, 2-5

set up services, 4-2

Microsoft Redirector, 2-11

modems, adding and deleting, 5-35

/M option, DOS BACKUP command, 5-19

move network services. See deinstall and move network services

MS-DOS. See DOS

N

"Name already exists" message, 4-9

"Name not found" message, 2-10

"Name server not responding" message, 5-23

Name Service

add

aliases, 4-19 to 4-20

domains, 4-13 to 4-15

groups, 4-39

members to groups, 4-39 to 4-40

organizations, 4-13 to 4-15

remote users, 4-53

servers on other networks, 4-56

users, 4-15 to 4-19

users on other networks, 4-57 to 4-58

administrator functions (3+Menus), 4-4

administrator setup, 4-10 to 4-12

backing up, 5-23

commands

ADD ALIAS, 4-19 to 4-20, 6-53 to 6-54

ADD DOMAIN, 4-13 to 4-15, 6-55 to 6-57

ADD GROUP, 4-39, 6-59 to 6-60

ADD MEMBER, 4-39 to 4-40, 6-61 to 6-62

ADD PROP, 6-63 to 6-65

ADD SERVER, 4-56, 6-67 to 6-70

ADD USER, 4-17 to 4-19, 4-57 to 4-58, 6-71 to 6-75

DEL, 6-77 to 6-80

DEL ALIAS, 6-81 to 6-82

DEL DOMAIN, 6-83 to 6-84

DEL MEMBER, 6-85 to 6-86

DEL PROP, 6-87 to 6-88

DIR, 4-60 to 4-61

DIR PROP, 6-89 to 6-90

MOD, 4-11, 4-12, 5-10 to 5-11, 6-91 to 6-100

- Name Service, commands (continued)
 - MOD DOMAIN, 6-101 to 6-102
 - MOD PROP, 6-103 to 6-104
 - overview of, 6-5 to 6-6
 - parameters of, 3-6 to 3-7
 - SET, 6-105 to 6-106
 - SHUTDOWN, 5-50 to 5-51, 6-107 to 6-108
- deinstalling, 5-42
- entries listing, 4-60 to 4-61
- home directory, 2-11
- named objects, 2-6 to 2-7
- naming conventions
 - aliases, 4-8 to 4-9
 - domains, 4-10
 - organizations, 4-10
 - user names, 4-8
- network number, 2-9 to 2-10
- properties, 6-64
- server directory contents, C-11
- setup described, 1-3 to 1-4
- shut down services, 5-50 to 5-51
- time and date setting, 6-106
- names. *See* aliases; groups; three-part names
- NET804 error, 6-136, 6-26, A-18, A-21
- NET805 error, 6-136, 6-26, A-18, A-21
- NetConnect Service
 - network number, 2-9 to 2-10
 - overview, 2-27
 - remote domain modification, 6-102
- 3+Network Services
 - APPS directory files required, 1-5
 - error messages, A-2 to A-37
 - network numbers, 2-9 to 2-10

- 3+Network Services (continued)
 - problem solving, 4-64 to 4-65
 - services available, 2-5
 - setup described
 - Backup Service, 1-11
 - File Service, 1-5
 - Mail Service, 1-6
 - Name Service, 1-3 to 1-4
 - Print Service, 1-6
 - Remote Service, 1-10
 - Route Service, 1-11
 - 3+Start Service, 1-7 to 1-9
 - shut down, 5-45 to 5-51
 - testing of, 4-61 to 4-64
 - users, 2-2 to 2-4
 - see also* network management
- network management
 - backing up files, 5-12 to 5-19
 - centralized management, 5-2
 - deinstall and move services, 5-40 to 5-44
 - distributed management, 5-3
 - move users, 5-5 to 5-10
 - printer management, 5-23 to 5-31
 - print queue reordering, 5-32 to 5-34
 - Remote Service, 5-35 to 5-36
 - restoring files, 5-19 to 5-22
 - Route Service, 5-36 to 5-39
 - shut down services, 5-45 to 5-51
 - storage space, 5-3 to 5-5
 - see also* administrator; 3+Network Services
- network number
 - for domains and organizations, 4-14
 - location of, 2-9 to 2-10
 - for remote users, 1-10, 4-53 to 4-54

N (continued)

network suppliers, F-3 to F-5

network user. *See* users

no prompt (/NP) parameter, 3-10

O

organizations, 2-7

add to Name Service, 4-13 to 4-15

naming conventions, 4-10

P

page ejects, 6-119

parameters (of commands), 3-4

addr=, 6-158

3COPY program, E-2 to E-3

default values, 3-7

File Service, 3-5

Name Service, 3-6 to 3-7

no prompt (/NP), 3-10

Print Service, 3-5

prnid, 6-116

SPOOL=, 6-127

passwords

for printers, 4-36

private 3+Start volumes, 4-46

shared directories, 6-12 to 6-13, 6-18

sharename, 2-19

use of, 2-8 to 2-9

paths, 2-12 to 2-13

P (continued)

PC-DOS. *See* DOS

PC Server with CIO SYS, server directory contents, C-4

PC servers, printers attached to, 2-20

\3PLUS\3BACKUP directory, 4-59 to 4-60

\3PLUS\3CONFIG directory, 4-21

 sharing, 4-35

\3PLUS\3START\BANNER.ASC file, 4-49

\3PLUS\3START\PRMPT.ASC file, 4-49

\3PLUS\3START\STARTVOL directory, 4-40, 4-42 to 4-43

Port Expansion Board, printers attached to, 2-20

portid, 6-130

ports, modifying for 3+Route, 5-36

printer identifiers, 2-21, 5-32

printers

 add to server, 5-27 to 5-28

 buffer size, 5-24

 configuration changes, 5-26 to 5-27

 delete from network, 5-29 to 5-31

 form number 6-120

 new links to, 6-119

 ports available, 4-36

 sharenames, 2-21, 5-24 to 5-25, 6-17

print queue, 2-21 to 2-22

 move to another printer, 5-30

 reordering of, 5-32 to 5-34

Print Service

 add a printer, 5-27 to 5-28

 administrator functions (3+Menus), 4-5

 commands

 DEL, **6-109 to 6-111**

 LINK, 2-21

 MOD, **6-113 to 6-114**

 MOVQ, 5-30, **6-115 to 6-116**

Print Service, commands (continued)

- overview of, 6-7 to 6-8
- parameters of, 3-5, 3-7
- QSTAT, 5-30, 5-32, 5-34
- RESUME, 6-117 to 6-123
- RESUME /BANNER, 6-120 to 6-121
- RESUME /FF, 6-120 to 6-121
- SET, 5-34, 6-125 to 6-128
- SET /SPOOL=, 6-127
- SHARE, 2-21, 4-36, 4-37 to 4-38, 5-25, 6-129 to 6-131
- SHUTDOWN, 5-47 to 5-49, 6-133 to 6-134
- SHUTDOWN /NEW, 5-47, 6-134
- STOP, 5-30, 6-135 to 6-137
- UNLINK, 6-139 to 6-140
- UNSHARE, 5-25, 6-141 to 6-142
- deinstalling, 5-41
- delete a printer, 5-29 to 5-31
- link to printer, 2-21
- overview of, 2-20 to 2-21
- printer configuration changes, 5-26 to 5-27
- printer ports available, 4-36
- print queue, 2-21 to 2-22
- setup described, 1-6, 4-35 to 4-36
- sharename changes, 5-24 to 5-25
- shut down services, 5-47 to 5-49
- Private access rights, 2-17 to 2-19
 - \3PLUS\3CONFIG directory, 4-35
- private volumes. *See* Start Service
- PRN:. *See* printer identifiers
- prnid1 parameter, 6-116
- prnid2 parameter, 6-116
- problem-solving, F-2 to F-3, 4-64 to 4-65
- PROFILE.SYS, enter network number, 4-54
- properties

properties (continued)

- delete, 6-87 to 6-88

- Name Service entries, 6-64

Public access rights, 2-17 to 2-19

- shared program directories, 4-30 to 4-31

- to 3+Start volumes, 4-43 to 4-46

public volumes. *See* Start Service

Q

queues. *See* print queues

R

Read access rights, 2-17 to 2-19

read-only access (DOS files), 4-29, 4-31

Read, Write access, DOS BACKUP /M option, 5-19

Read, Write access rights, 2-17 to 2-19

Read, Write, Create access rights, 2-17 to 2-19

- data file access, 4-31 to 4-34

- shared program directories, 4-30 to 4-31

Remote Server disk, file listings, B-10

Remote Service

- add users to Name Service, 4-53

- deinstalling, 5-43

- management of, 5-35 to 5-36

- network number, 1-10, 4-53 to 4-54

- server directory contents, C-12

- setup described, 1-10, 2-25

- status messages, A-39 to A-42

- see also* Route Service

Remote User disk, file listings, B-13

R (continued)

Remote workstation startup, server directory contents, C-6

repairs, F-6 to F-7

reserved words, 4-8

restoring files, DOS RESTORE command, 5-19 to 5-22

return material authorization (RMA) number, F-6 to F-7

Route Server, file listings, B-9

Route Service

- deinstalling, 5-43

- management of, 5-36 to 5-39

- network number, 2-9 to 2-10

- overview, 2-26

- remote domain modification, 6-102

- server directory contents, C-12

- servers on other networks, 4-56

- setup described, 1-11

- status messages, A-39 to A-42

- users on other networks

 - 3+File Service users, 4-57 to 4-58

 - 3+Mail users, 4-57

 - see also* Remote service

S

scrolling, stop 6-42

3Server, server directory contents, C-9 to C-10

"server not responding" message, 4-18

servers

- backing up files, 5-12 to 5-19

- check disk space, 5-4

- create disk space, 5-4 to 5-5

- delete, 6-78 to 6-79

- directory contents

- servers, directory contents (continued)
 - local workstation startup, C-5
 - local workstation startup (with EPATH), C-8
 - Mail Service, C-11
 - Name Service, C-11
 - PC Server with CIOSYS, C-4
 - Remote Service, C-12
 - Remote workstation startup, C-6
 - Route Service, C-12
 - 3Server, C-9 to C-10
 - Share Service, C-11
 - Share User, C-6
 - Start Master, C-7
 - Start Service, C-12
 - TurboShare Service, C-13
- distributed network management, 5-3
- modify Name Service entries, 6-96 to 6-98
- restoring files, 5-19 to 5-22
- storage space on, 5-3
- 3Server/3+System disk, file listings, B-5
- server-user, 2-3
 - capabilities, 2-4
 - File Service setup, 4-23
 - first-level directory, 2-14
- 3+Share Name Service disk, network number, 2-9 to 2-10
- 3+Share PC Server/File and Print disk, file listings, B-6
- 3+Share 3Server/File and Print disk, file listings, B-7
- 3+Share Server/Name disk, file listings, B-7
- 3+Share User 1 disk, file listings, B-11
- 3+Share User 2 disk, file listings, B-12
- Shareable access rights, 2-17 to 2-19
- shared directories
 - accessing, 2-19 to 2-20

shared directories (continued)

- applications software access, 4-30 to 4-31, 4-31 to 4-34
- modify password and access rights, 6-12 to 6-13
- number allowed, 6-17
- \3PLUS\START\STARTVOL directory, 4-42 to 4-43
- 3+Share server directory structure, 2-15
- use of, 2-16
- see also* directories

sharenames

- access rights, 2-17 to 2-19
- for APPS directory, 4-23 to 4-24
- assign to a directory, 6-17
- delete, 6-27 to 6-28
- described, 2-16 to 2-17
- modification of, 6-12 to 6-13
- passwords, 2-19
- for \3PLUS\3BACKUP directory, 4-59 to 4-60
- printers, 2-21, 4-36
 - changing, 5-24 to 5-25
- subdirectories, 4-30 to 4-31

Share Service, server directory contents, C-11

Share User, server directory contents, C-6

SHRLIST file, 5-41

shut down network services, 5-45 to 5-51

spoolid, 5-32

spool identifier, 2-22

Start Master disk, 4-40

server directory contents, C-7

Start Server, file listings, B-14

Start Service

banner page, 1-9, 4-49, 6-119

commands

CREATE, 4-45 to 4-46, 4-48, 6-143 to 6-146

Start Service, commands (continued)

- CREATE /TO=, 6-144
- DEL, 4-48, 6-147 to 6-148
- DIR, 4-48, 6-149 to 6-151
- LINK, 4-52, 6-153 to 6-154
- MOD, 4-48, 4-52, 6-155 to 6-157
- overview of, 6-9
- UNLINK, 4-52, 6-158 to 6-159
- UNLINK addr=, 6-158
- deinstalling, 5-44
- overview, 2-25
- private volumes, 4-41
 - change information in, 4-51
 - creating, 4-46 to 4-48
- prompt selection, 4-49 to 4-50
- public volumes, 4-41
 - change information in, 4-51 to 4-52
 - create, 4-43 to 4-46
- server directory contents, C-12
- setup described, 1-7 to 1-9, 4-40 to 4-42
- share \3PLUS\START\STARTVOL directory, 4-42 to 4-43
- volumes, 4-40 to 4-41
- STATUS.LOG file
 - abbreviations used, A-41
 - accessing, 5-37 to 5-39, A-39
 - messages, A-40 to A-42
- status messages (Route and Remote services), A-39 to A-42
- STATUS program, 5-37 to 5-39
- subdirectories, 2-12
 - empty (in Mail Service), 5-42
 - sharenames, 4-30 to 4-31
- support, F-1 to F-7

T

- tape backup. *See* Backup Service
- technical support, F-1 to F-7
- telephone numbers, modifying, 5-36
- test 3+Network Services, 4-61 to 4-64
- three-part names
 - aliases, 4-19
 - servers, 4-17
 - specifying, 2-7
 - syntax of, 4-16
- time setting, 6-106
- Token-Ring Network (IBM), 2-11
 - 3+NetConnect Service, 2-27
- TurboShare PC Server disk, file listings, B-6
- TurboShare Service, server directory contents, C-13

U

- undelivered mail, 6-29
- "User already exists" message, 4-58
- users, 2-1 to 2-4
 - add to Name Service, 4-15 to 4-19
 - capability of, 4-17
 - delete, 6-78
 - home directory, 4-18
 - modify Name Service entries, 6-92 to 6-95
 - naming conventions, 4-8
 - number of remote users, 6-51

W

wildcard characters, in commands, 3-8 to 3-9

Write access rights, 2-17 to 2-19

Write, Create access rights, 2-17 to 2-19

Z

zero-length files, in Mail Service, 5-42

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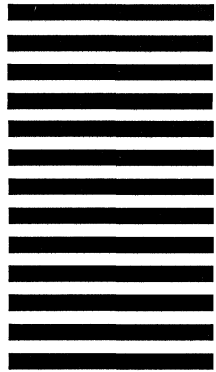
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